

SANDIA REPORT

SAND 2008-xxxx

Unclassified Unlimited Release

Printed month year

Supersedes SAND 2007-1213

Dated March 2007

Sandia National Laboratories, California Environmental Planning and Ecology Program Annual Report March 2008



B. L. Larsen

Prepared by
Sandia National Laboratories
Livermore, California 94550

Sandia is a multiprogram laboratory operated by Sandia Corporation, a Lockheed Martin Company, for the United States Department of Energy's National Nuclear Security Administration under Contract DE-AC04-94AL85000.

Approved for public release; further dissemination unlimited.



Issued by Sandia National Laboratories, operated for the United States Department of Energy by Sandia Corporation.

NOTICE: This report was prepared as an account of work sponsored by an agency of the United States Government. Neither the United States Government, nor any agency thereof, nor any of their employees, nor any of their contractors, subcontractors, or their employees, make any warranty, express or implied, or assume any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product, or process disclosed, or represent that its use would not infringe privately owned rights. Reference herein to any specific commercial product, process, or service by trade name, trademark, manufacturer, or otherwise, does not necessarily constitute or imply its endorsement, recommendation, or favoring by the United States Government, any agency thereof, or any of their contractors or subcontractors. The views and opinions expressed herein do not necessarily state or reflect those of the United States Government, any agency thereof, or any of their contractors.

Printed in the United States of America. This report has been reproduced directly from the best available copy.

Available to DOE and DOE contractors from

U.S. Department of Energy
Office of Scientific and Technical Information
P.O. Box 62
Oak Ridge, TN 37831

Telephone: (865) 576-8401
Facsimile: (865) 576-5728
E-Mail: reports@adonis.osti.gov
Online ordering: <http://www.doe.gov/bridge>

Available to the public from

U.S. Department of Commerce
National Technical Information Service
5285 Port Royal Road
Springfield, VA 22161

Telephone: (800) 553-6847
Facsimile: (703) 605-6900
E-Mail: orders@ntis.fedworld.gov
Online order: <http://www.ntis.gov/ordering.htm>



SAND 2008-xxxx
Unlimited Release
Printed January 2008

Supersedes SAND 2007-1213
Dated March 2007

Sandia National Laboratories, California Environmental Planning and Ecology Program Annual Report March 2008

Barbara L. Larsen
Environmental Management Department
Sandia National Laboratories, California
7011 East Avenue
Livermore, CA 94550

ABSTRACT

The annual program report provides detailed information about all aspects of the Sandia National Laboratories, California (SNL/CA) Environmental Planning and Ecology Program for a given calendar year. It functions as supporting documentation to the *SNL/CA Environmental Management System Program Manual*. The program report describes the activities undertaken during the past year, and activities planned in future years to implement the Planning and Ecology Program, one of six programs that supports environmental management at SNL/CA.

Contents

| | |
|--|-----------|
| Summary of Document Changes | 6 |
| 1 Program Description..... | 7 |
| 1.1 NEPA..... | 7 |
| 1.2 Ecological Resources | 8 |
| 1.2.1 Site Ecology..... | 8 |
| 1.2.2 Wildlife and Habitat Management..... | 10 |
| 1.2.3 Minimizing Effects to Wildlife and Habitat | 11 |
| 1.2.4 Wildlife and Habitat Monitoring and Surveys..... | 12 |
| 1.2.5 Arroyo Seco Restoration..... | 14 |
| 1.2.6 Burrow Habitat | 14 |
| 1.3 Cultural Resources | 14 |
| 1.4 Environmental Reporting | 15 |
| 1.5 EMS Core Team Responsibilities | 15 |
| 2 Program Drivers | 15 |
| 3 Operational Controls | 19 |
| 4 Documents Produced | 19 |
| 5 Approved Job Descriptions, Qualifications, and Job-Specific Training..... | 20 |
| 5.1 Planning and Ecology Job Assignments | 20 |
| 5.1.1 Planning and Ecology Program Lead | 21 |
| 5.1.2 Wildlife Biologist | 21 |
| 5.1.3 Wildlife Technologist | 22 |
| 5.1.4 Wildlife Biology Intern..... | 22 |
| 5.2 Specialized Assignments / Certifications | 23 |
| 6 Performance Measures | 23 |
| 6.1 Exceptional Environmental Management | 23 |
| 6.2 Enhance the Natural Habitat..... | 24 |
| 6.2.1 Biological Diversity and Species Richness | 24 |
| 6.2.2 Arroyo Seco Improvement Program..... | 26 |
| 6.2.3 Grassland Habitat..... | 27 |
| 7 Quality Assurance | 28 |
| 7.1 Program Risk Assessment | 28 |
| 7.2 Maintaining Program Quality..... | 29 |
| 8 Program Assessments | 30 |
| 8.1 Follow-up on 2006 Program Assessments | 30 |
| 8.2 Program Self-Assessment..... | 30 |
| 8.3 Line Performance Assessment | 30 |
| 8.4 Environmental Program Representative Assessment..... | 30 |
| 8.5 Corporate / Line Self Assessment | 30 |
| 9 Accomplishments | 32 |
| 10 Trends | 32 |
| 11 Goals and Objectives | 33 |
| Appendix A Requirements from Biological and Conference Opinion | 39 |
| Appendix B Personnel Assignments..... | 41 |
| Appendix C Program Risk Assessment | 42 |
| Appendix D Line Performance Assessment | 47 |

Figures

| | |
|--|---|
| Figure 1 Habitat Types at SNL/CA | 9 |
|--|---|

| | |
|---|----|
| Figure 2 SNL/CA Site Land Use Designations from Biological Assessment | 10 |
| Figure 3 Review Process for Wildlife and Habitat Management | 13 |
| Figure 4 NEPA Lead-Time Statistics | 24 |
| Figure 5 Wildlife Richness at SNL/CA, 2001 - 2007 | 25 |
| Figure 6 SNL/CA Biodiversity Index, 2007 | 26 |
| Figure 7 Plant Survival of Restored Arroyo Seco Areas | 26 |
| Figure 8 Biodiversity of Bird Species Along Arroyo Seco | 27 |
| Figure 9 Italian Thistle in Grassland Habitat at SNL/CA | 28 |
| Figure 10 Environmental Planning and Ecology Program Document Review Form | 31 |
| Figure 11 Targets and Actions Supporting Enhancement of Natural Habitat | 34 |

Tables

| | |
|---|----|
| Table 1 Summary of Significant Changes to Environmental Planning and Ecology Program Report | 6 |
| Table 2 Arroyo Seco Habitat Restoration Success Criteria | 14 |
| Table 3 Compliance Drivers for Environmental Planning and Ecology Program | 16 |
| Table 4 Technical Work Documents for the Environmental Planning and Ecology Program | 19 |
| Table 5 Environmental Planning and Ecology Program Documents and Reports | 20 |
| Table 6 Environmental Planning and Ecology Program Training Matrix | 23 |
| Table 7 Planning and Ecology Program Risks 2008 | 28 |

Summary of Document Changes

Significant changes made to the 2008 edition of the Environmental Planning and Ecology Program Report are marked with a sidebar within the document and summarized in Table 1.

Table 1 Summary of Significant Changes to Environmental Planning and Ecology Program Report

| Section | Page | Change |
|----------|---------|---|
| 1.2.1 | 9 | Update to special concern bird species. |
| 1.2.6 | 14 | Extended date for completing literature review and ground squirrel burrow colony counts. |
| 2 | 16 | One regulatory change occurred in 2007 regarding the Migratory Bird Permitting process. |
| Table 3 | 16 | Updated summary of migratory bird permit regulations, 50 CFR 21. |
| Table 3 | 17 | Updated summary of EO 13186 to reflect MOU established between DOE and USFWS. |
| 2 | 18 | Updated summary of audits and assessments for 2007. |
| Table 4 | 19 | Updated versions and dates for valid technical work documents. Added two additional documents that provide operational control: OP471680, IDT and OP472208, Off-road Access |
| 5.1 | 20 | Removed the Environmental Management Department Technologist position for job assignments. |
| 6.1 | 24 | Updated NEPA review lead-time data for 2007. |
| 6.2.1 | 25 / 26 | Updated the wildlife richness data. Added a new metric for biodiversity. |
| 6.2.2 | 26 / 27 | Added metrics for the Arroyo Seco Improvement Program. |
| Figure 9 | 28 | Updated the figure showing Italian thistle in 2007. |
| 7.1 | 28 / 29 | Updated risk assessment data with the 2008 risks. |
| 8.3 | 30 | Added a summary of the line performance assessment completed in 2007. |
| 8.5 | 30 | Updated the summary of corporate assessments applicable to the program. |
| 9 | 32 | Updated accomplishments with 2007 information. |
| 10 | 32 / 33 | Added two new trends. |
| 11 | 34 -38 | Replaced targets and actions schedules with current. |

1 Program Description

The Environmental Planning and Ecology Program (Planning and Ecology) is one of six programs under the Environmental Management Department at Sandia National Laboratories, California (SNL/CA). The program oversees activities associated with the National Environmental Policy Act (NEPA), wildlife and habitat management, and cultural resources. Planning and Ecology is part of the SNL/CA Environmental Management System (EMS), and maintains responsibility for general environmental reporting that spans all six program areas. It is an indirectly funded program, supported through the Integrated Enabling Services Strategic Management Unit.

This program report provides detailed information about all aspects of Planning and Ecology operations. It functions as supporting documentation to the *SNL/CA EMS Program Manual*. The Program Report is updated annually to reflect the dynamic nature of program operations, accomplishments, and goals.

1.1 NEPA

Under NEPA, all Federal agencies are required to evaluate the impacts of their proposed actions on the environment. In 2003, the Department of Energy (DOE), National Nuclear Security Administration, Sandia Site Office (NNSA/SSO) issued the *Final Site-Wide Environmental Assessment of the Sandia National Laboratories, California* (SWEA) and Finding of No Significant Impact (FONSI). The SWEA evaluates the impacts of site operations over a ten-year period, and the FONSI concludes that continuation of site operations is not a major federal action significantly affecting the quality of the human environment.

Each year, Planning and Ecology evaluates the bounding impact scenario presented in the SWEA for continued applicability to site operations. Actual site data is compiled and compared against the projected impacts. Where actual operations exceed, or are close to, projected operations, relevant impact areas are further evaluated to determine if impacts have occurred or are projected to occur in future years. The information from this comparison can then be used to change site activities and minimize or eliminate environmental impacts resulting from site operations. This comparison is presented in the annual site environmental report.

At SNL/CA, new projects or programs and significant changes in existing projects or programs are subjected to an internal NEPA review. All NEPA reviews are accomplished electronically, using the ISMS NEPA Module (http://www-irm.sandia.gov/iss/isms_software/runnepa.htm). The member of the workforce responsible for NEPA compliance (e.g., the principle investigator or action owner) completes the electronic project information form and submits it for review to the NEPA Subject Matter Expert (SME). The NEPA SME determines if the project falls within the scope of an existing NEPA document or if it requires an NNSA/SSO NEPA review. The majority of projects proposed at SNL/CA fall within the scope of the SWEA. Actions that are not covered by existing NEPA documentation are submitted electronically to the NNSA/SSO for a NEPA determination. Planning and Ecology can provide a recommendation for the NEPA determination, but NNSA/SSO makes the final determination.

The NEPA review process supports identification of potential environmental impacts associated with proposed actions. Through the ISMS NEPA Module, an action owner is directed to answer a series of questions specifically designed to identify impacts. Because NEPA reviews are conducted during project planning, mitigation measures can be implemented to minimize or eliminate impacts before an action begins.

1.2 Ecological Resources

At SNL/CA, wildlife and habitat management focuses on stewardship and enhancement of the ecological resources found on site. Under the EMS program, objectives and targets are established for enhancing the natural habitat and maintaining compliance. Routine and project-specific monitoring activities provide data needed to evaluate our progress towards meeting site objectives. Objectives and targets applicable to Planning and Ecology are provided in Section 11.

1.2.1 Site Ecology

SNL/CA is located at the boundary of an urban/rural interface in eastern Alameda County. The main campus occupies approximately 160 of a total 410 acres in the center of the property and is surrounded on the west, south, and east with open, undeveloped space. This open space (outer perimeter area) and the site's location create a localized haven for wildlife in the region.

The plant community at SNL/CA is typical of the surrounding region, consisting primarily of non-native grassland. Localized areas of coyote brush scrub, willow riparian woodland, and wetland habitat are also present. Figure 1 shows habitat types found on site. No threatened, endangered, proposed, or candidate plant species are present at SNL/CA.

SNL/CA provides habitat for a range of wildlife species and maintains a 106-acre wildlife reserve. The wildlife-reserve was designated as part of the Endangered Species Act consultation process with the US Fish and Wildlife Service (USFWS) (commonly referred to as Section 7 Consultation). The wildlife reserve is shown on Figure 2. Disturbance in the wildlife reserve is minimal and includes routine mowing and weed control for fire management, and access by Planning and Ecology to conduct wildlife surveys.

Arroyo Seco, which traverses SNL/CA from southeast to northwest, is another ecological resource at the site. An established riparian area containing native trees and other vegetation is present along the eastern stretch of the arroyo within the wildlife reserve. Arroyo improvements and habitat enhancements are underway as part of an Arroyo Seco Improvement Program expected to be completed over a ten-year period.

Two threatened species, the California red-legged frog (*Rana aurora draytonii*) and the California tiger salamander (*Ambystoma californiense*), are present at SNL/CA. California ground squirrels (*Spermophilus beecheyii*), native to the area, create extensive burrow systems on site that supply retreat and estivation habitat for these two threatened species. The Arroyo Seco serves as a potential travel corridor for both species, and provides a temporary water source for red-legged frogs that use shallow pools during spring and early summer months.¹

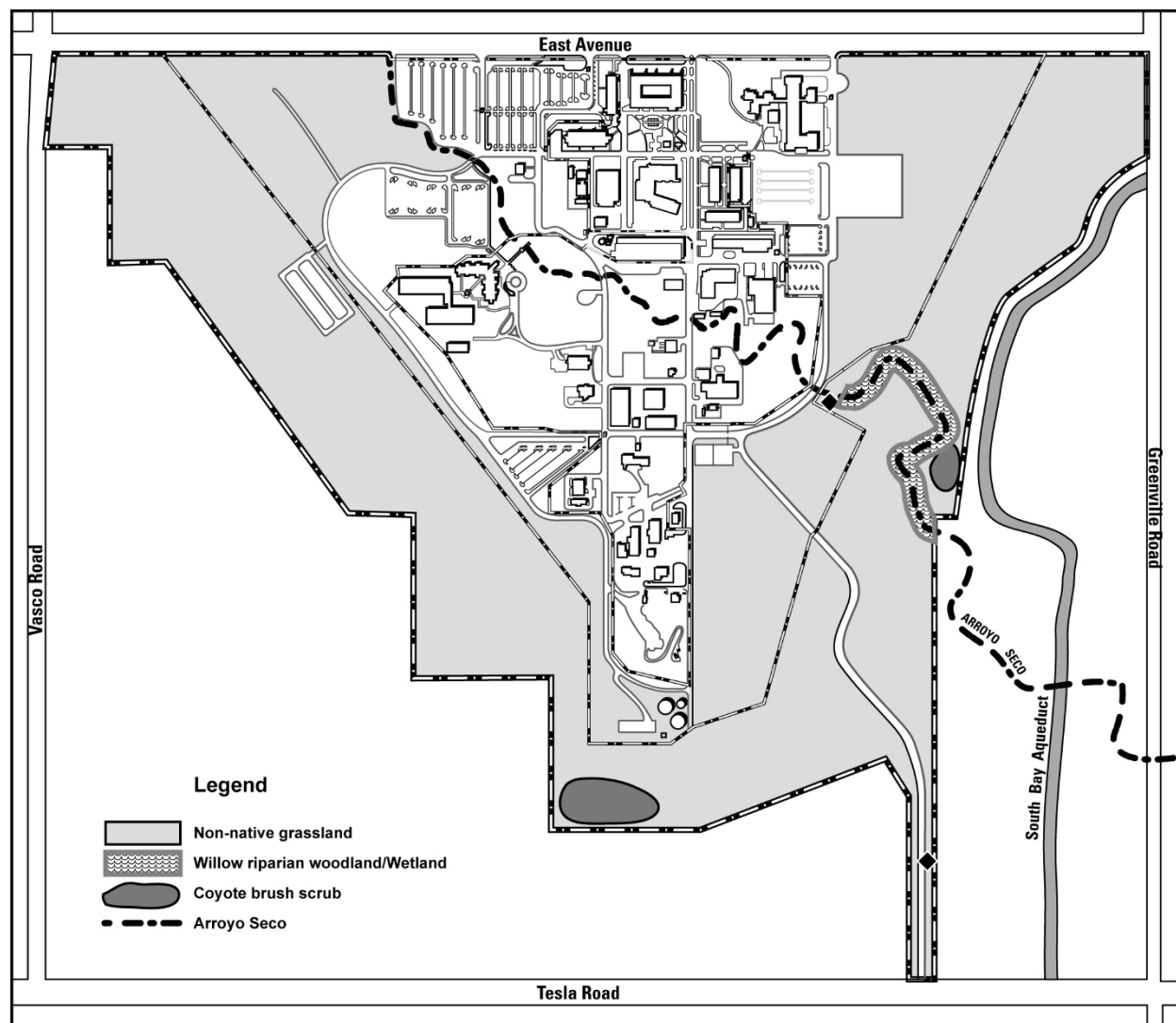


Figure 1 Habitat Types at SNL/CA

Numerous bird species nest or forage on site, most of which are protected under the Migratory Bird Treaty Act. Two species observed at SNL/CA in 2007, the Swainson's hawk (*Buteo swainsoni*) and Bank swallow (*Riparia riparia*) are also California state threatened species. Neither threatened species nested at SNL/CA. Several birds are also Federal and/or state special concern species or fully protected in California. These include the Black-chinned sparrow (*Spizella atrogularis*), Cooper's hawk (*Accipiter cooperii*), Peregrine falcon (*Falco peregrinus*), Prairie falcon (*Falco mexicanus*), Sharp-shinned hawk (*Accipiter striatus*), Yellow warbler (*Dendroica petechia*), White-tailed kite (*Elanus leucurus*), Golden eagle (*Aquila chrysaetos*), and Loggerhead shrike (*Lanius ludovicianus*).

¹ California red-legged frogs were observed in Arroyo Seco on the east side of SNL/CA in 2004, 2005, and 2006. However, no eggs or tadpoles were seen.

SNL/CA is located within the range of the mountain lion (*Puma concolor*), a “specially protected mammal” under California law. Deer, considered the primary prey of the mountain lion, frequently forage in the wildlife reserve on the east side of the property (Figure 2). Smaller mammals, such as ground squirrels, rabbits, foxes, and feral cats, are also a potential food source for a mountain lion.

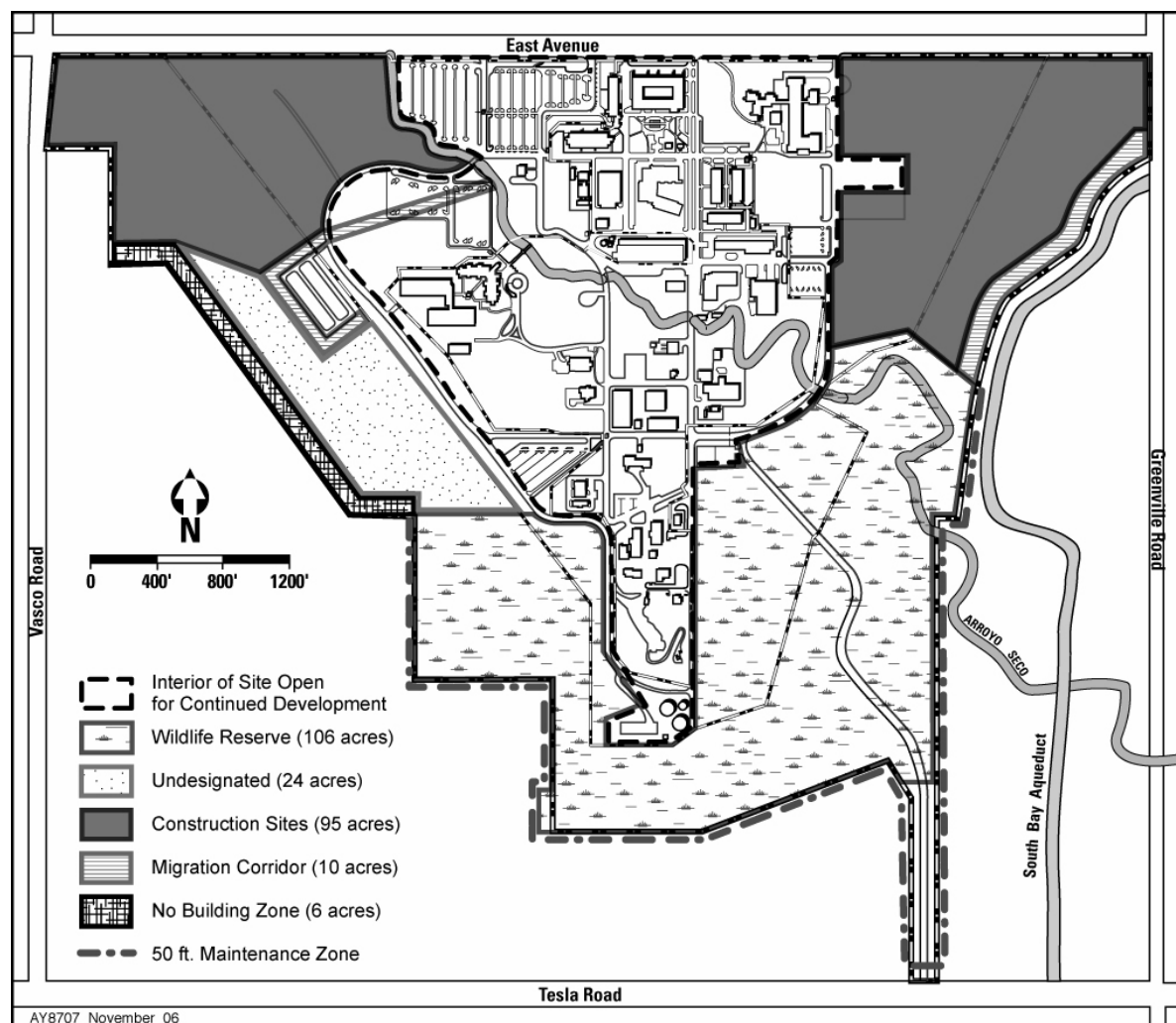


Figure 2 SNL/CA Site Land Use Designations from Biological Assessment

1.2.2 Wildlife and Habitat Management

In 2000, SNL/CA established an integrated approach to wildlife and habitat management that merges long-term management of ecological resources with site planning and operations. This integrated approach included an analysis through the NEPA process of future land uses, a maximum level of site operations, and planned improvements to Arroyo Seco. Parallel with the NEPA analysis, Sandia initiated the Section 7 Consultation process with the U.S. Fish and Wildlife Service (USFWS) to address potential affects to listed species from proposed activities and maximum operations. As part of the consultation process, NNSA/SSO and SNL/CA agreed to prepare a wildlife and habitat management plan that includes provisions for surveys,

monitoring, and control/management of wildlife and plant species. Section 1.2 (and subsections) of this report functions as the SNL/CA Wildlife and Habitat Management Plan.

Through the Section 7 Consultation process, NNSA/SSO and Sandia also agreed to identify success criteria for the following.

- habitat restoration in Arroyo Seco
- distribution and abundance of ground squirrel burrows in grasslands that may provide habitat for red-legged frogs and tiger salamanders.

1.2.3 Minimizing Effects to Wildlife and Habitat

Consistent with routine environmental review processes, Planning and Ecology staff evaluate site activities to identify potential effects to wildlife and habitat, to determine if proposed activities are compliant with requirements, and to identify opportunities for minimizing effects and enhancing the existing environment. Figure 3 summarizes the review process as it relates to wildlife and habitat management.

SNL/CA is required by the Biological and Conference Opinion issued by the USFWS for site operations to implement measures to minimize the potential for harassment, harm, or mortality of California red-legged frogs and California tiger salamanders. The biological opinion identifies the following ten non-discretionary terms and conditions to minimize potential effects to these listed species.

1. SNL/CA operations will be implemented as described in the biological opinion and associated documents, including all conservation measures. See Appendix A for a complete list of requirements.
2. New buildings and infrastructure shall be confined to the minimum area necessary to achieve their purpose.
3. Where construction areas abut the wildlife preserve, SNL/CA shall install fencing to prevent workers from entering the preserve.
4. Landscaping in new construction areas shall be designed to minimize water consumption to reduce irrigation runoff to Arroyo Seco.
5. A USFWS-approved SNL/CA employee or contractor will conduct a training session for all construction, landscape, and maintenance personnel prior to any construction, landscaping, or maintenance activities that may affect the red-legged frog or tiger salamander. Training will include a description of the red-legged frog and tiger salamander, their habitats, and the protective measures to be implemented for these species.
6. Plastic mono-filament erosion control matting shall not be used where red-legged frogs and tiger salamanders may become entangled or trapped in it, particularly in Arroyo Seco.
7. Any individuals handling red-legged frogs or tiger salamanders shall hold a valid 10(a)(1)(A) Scientific Collection Permit from the Service. All capturing and relocation protocols utilized shall be approved by the Service and California Department of Fish and Game prior to implementation.
8. The SNL/CA shall appoint a representative who will be the contact source for any employee or contractor who might inadvertently kill or injure a red-legged frog or tiger salamander or who finds a dead, injured or entrapped individual. The representative shall be identified during the employee education program. The representative's name and telephone number shall be provided to the Service prior to the initiation of ground disturbance activities.
9. Within five days prior to de-watering and/or other construction related activity, all suitable red-legged frog and tiger salamander aquatic habitat shall be surveyed. All size classes of red-legged frogs and tiger salamanders will be moved out of the work area to a suitable pool away from the construction site. No

more than 14 days prior to construction, SNL/CA shall notify the Service of the location and condition of this pool habitat. No frogs or salamanders shall be moved before the Service has approved the relocation site.

10. SNL/CA shall initiate a bullfrog control program. All potential bullfrog breeding habitat shall be surveyed annually for bullfrog egg masses, larvae, juveniles, and adults. All age classes of bullfrogs shall be removed and killed.

1.2.4 Wildlife and Habitat Monitoring and Surveys

Planning and Ecology conduct wildlife and habitat monitoring to document species diversity and richness at the site, and to keep abreast of listed and sensitive plants and animals that may be present at SNL/CA. Early identification of threatened, endangered, and sensitive species allows Planning and Ecology to evaluate appropriate protections that will minimize or eliminate impacts to these species and their habitats. Planning and Ecology uses monitoring data to establish requirements and address potential project-specific short-term effects as well as potential long-term effects from site activities. SNL/CA also uses monitoring information to enhance campus safety for personnel and visitors by reducing the potential for wildlife/human encounters.

Wildlife monitoring is conducted year-round to document species living and foraging on site. Monitoring is accomplished with field surveys, track stations, fence line checks, and the use of trail cameras. SNL/CA uses a variety of field survey methods including visual observation, digital photography, bird counts, transect surveys, protocol surveys, and nest/den identification. SNL/CA also monitors specifically for areas where mountain lions could access the developed areas of the site. When identified, access points are closed to reduce the potential for a lion to enter human occupied areas.

Annually from April through September, Planning and Ecology complete pre-activity surveys for nesting birds before shrubs or trees are trimmed or removed. These pre-activity surveys support compliance with the Migratory Bird Treaty Act by ensuring that birds, nests, or eggs are not disturbed during routine site operations.

Planning and Ecology visually monitors habitat conditions throughout the year while conducting field surveys. Changes in habitat conditions and wildlife use are tracked. This information, together with wildlife monitoring data, is used to identify habitat enhancement measures in appropriate areas at the site.

Plant surveys at SNL/CA are completed every five to ten years, as needed for updating site-wide NEPA impact analyses. Because there are no threatened or endangered plant species at SNL/CA, annual surveys are not done. The most recent plant survey was completed in 2001.

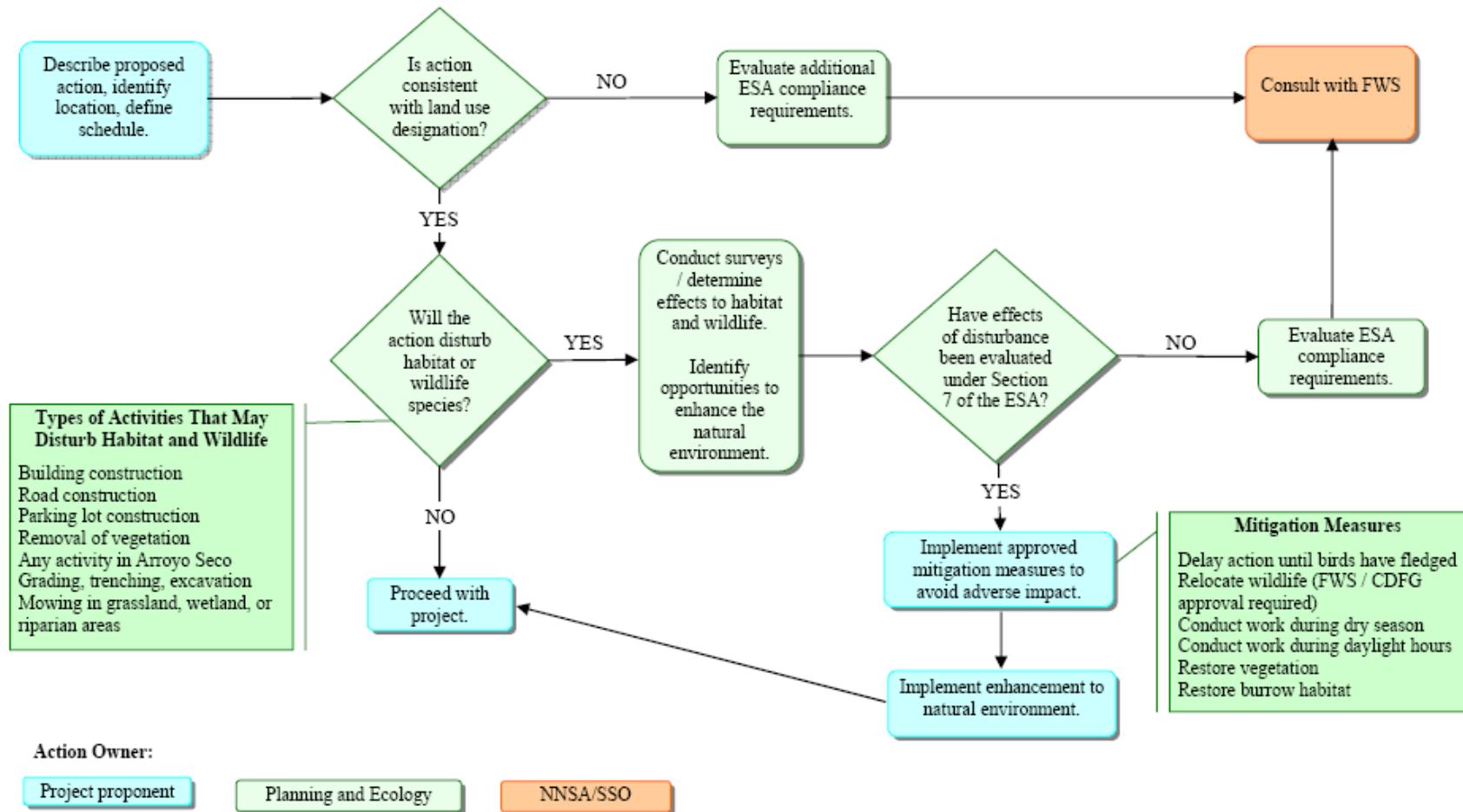


Figure 3 Review Process for Wildlife and Habitat Management

1.2.5 Arroyo Seco Restoration

Success criteria for habitat restoration in Arroyo Seco are presented in Table 2. Criteria for survival, growth, presence of native plants, and habitat use are included. Planning and Ecology staff will monitor restored areas annually for potential restoration failures. Monitoring data will be used to identify preventive and corrective actions necessary to ensure restoration success.

Table 2 Arroyo Seco Habitat Restoration Success Criteria

| Metric | Success Criteria | Monitoring |
|--|---|---|
| Overall survival of trees and shrubs planted (includes replants) | 85% | Monitoring will continue until criteria met for 5 consecutive years - Running count of trees planted - Running count of shrubs planted - Annual count of number of trees surviving - Annual count of number of shrubs surviving |
| Tree cover (at 2 years) | 40% | Sampling of random plots using densiometer |
| Tree cover (at 5 years) | 60% | Sampling of random plots using densiometer |
| Tree cover (at 10 years) | 75% | Sampling of random plots using densiometer |
| Shrub cover (at 2 years) | 20% | Sampling of random plots using line intercept method |
| Shrub cover (at 5 years) | 30% | Sampling of random plots using line intercept method |
| Shrub cover (at 10 years) | 45% | Sampling of random plots using line intercept method |
| Native trees | 75% | Annual count of native trees |
| Native shrubs | 75% | Annual count of native shrubs |
| Riparian grass / ground cover (native) | 90% | Sampling of random plots using Daubenmeyer technique |
| <i>Wildlife and avifauna use</i> | species richness and density comparable to other site areas along Arroyo Seco | Annual wildlife survey for types and numbers of individuals and nest / den sites |

1.2.6 Burrow Habitat

During 2008, Planning and Ecology plans to complete a literature review to better understand conditions that may affect distribution and abundance of ground squirrel burrows and their use by red-legged frogs and tiger salamanders. By the end of 2009, wildlife staff will prepare an estimate of existing burrow colonies in the grassland area at SNL/CA. The information obtained from the literature review along with burrow colony counts will be used to establish success criteria for distribution and abundance of burrow habitat as required under the Biological Opinion.

1.3 Cultural Resources

Two cultural resource assessments have been conducted at SNL/CA. A complete site assessment for historic resources was completed in 1990. No historic or prehistoric resources were identified during the 1990 assessment. In 2001, SNL/CA completed an historic building survey. None of

the buildings at SNL/CA were identified as historically significant or eligible for the National Register of Historic Places.

Although there are currently no known cultural resources present on site, the 1990 assessment did identify the potential for buried resources at SNL/CA that could be unearthed during construction and excavation activities. Sandia's construction specifications outline special procedures for preservation of cultural resources should any be unearthed during a project. In 2005, Sandia prepared a Cultural Resources Management Plan (CRMP) to outline, in general, the process that would be followed for inadvertent discovery of buried resources.

1.4 Environmental Reporting

Planning and Ecology maintains responsibility for preparing and distributing the annual site environmental report (a DOE requirement). The annual report provides environmental information, compliance status, and results of environmental monitoring activities to DOE and NNSA/SSO, Sandia personnel, and external stakeholders. Additional information about this report is provided in Section 4.

1.5 EMS Core Team Responsibilities

Planning and Ecology is responsible for documenting EMS program development, implementation, and improvement in the *SNL/CA EMS Program Manual*, which is updated annually. The Planning and Ecology Program Lead is an active member of the EMS Core Team, coordinates semi-annual surveillance audits to maintain ISO 14001:2004 registration, assists in setting environmental objectives and targets, and maintains responsibility for developing and updating project schedules.

2 Program Drivers

Environmental compliance drivers include laws, regulations, orders, directives, and other corporate and site-specific requirements. Drivers that are applicable to Planning and Ecology are listed and summarized in Table 3.

Planning and Ecology uses a variety of sources to stay current on applicable compliance drivers. The primary source used is the Sandia corporate notification service provided by corporate ES&H Library staff. Sandia's library staff monitors DOE requirements and federal, state, and local government publications for regulatory issues applicable to SNL operations. Planning and Ecology receives notifications weekly, which are then reviewed for applicability to SNL/CA operations. Planning and Ecology also receives and reviews the *California Environmental Insider*, a California-specific publication, issued twice per month, which summarizes current regulatory issues and changes that affect activities in the state. Both federal and state issues of concern are addressed in this publication. Additional sources of information on regulatory changes include direct communication with NNSA/SSO and regulating agencies, and periodic review of agency web sites. New requirements are incorporated into program activities and

communicated to the site through electronic notifications, the Site Interdisciplinary Team (IDT) process, self-assessments, and targeted communications.

During 2007, one regulatory change to the Migratory Bird Permitting process occurred. On October 5, 2007, the USFWS issued a final rule to simplify removal of migratory birds from buildings. Under this rule, a migratory bird (except federal threatened and endangered species, bald eagles, and golden eagles) may be removed from inside a building without the need for a migratory bird permit. Birds must be captured using humane methods and immediately released to the wild. The change does not allow removal of active nests from building interiors or birds and nests from the outside of buildings.

Table 3 Compliance Drivers for Environmental Planning and Ecology Program

| Driver / Effective Date | Summary | Regulating Authority |
|---|--|---|
| Federal Laws | | |
| National Environmental Policy Act (NEPA) / 1969 | National charter for protection of the environment, requires all federal agencies to evaluate the affects of agency actions on the human environment (physical, socioeconomic, and cultural) | Council on Environmental Quality, Executive Office of the President (CEQ) |
| National Historic Preservation Act / 1966 | Requires federal agencies to consider potential effects of agency actions on cultural resources | National Park Service |
| Archaeological Resources Protection Act / 1979 | Provides for protection of archaeological resources and to prevent looting and destruction of resources | Department of Interior |
| Endangered Species Act / 1973 | Provides for the designation and protection of wildlife and plant species, requires federal agencies to consult on projects with the potential to affect threatened and endangered species | USFWS |
| Migratory Bird Treaty Act / 1916 | Provides for protection of migratory bird species | USFWS |
| Federal Insecticide, Fungicide, and Rodenticide Act / 1972 | Provides for control of pesticide distribution, sale, and use | EPA delegated to State agency - California Department of Pesticide Regulation |
| Federal Regulations^a | | |
| 10 CFR 1021 DOE NEPA Implementing Procedures | NEPA procedures for DOE facilities | DOE |
| 40 CFR 1500 – 1508, CEQ Regulations for Implementing the Procedural Provisions of the National Environmental Policy Act | Provides requirements for federal agencies to implement NEPA | CEQ |
| 36 CFR 800, Protection of Historic Properties | Procedures define how federal agencies meet statutory responsibilities for historic preservation | Delegated to State Historic Preservation Office |
| 50 CFR 17, Endangered and Threatened Wildlife and Plants | Identifies protected species and habitat | USFWS |
| 50 CFR 21, Migratory Bird Permits | Permit process for migratory birds. Amended in 2007 to allow removal of most migratory birds from inside buildings. | USFWS |
| 50 CFR 402, Interagency Cooperation – Endangered Species Act | Procedures for consultation process with Fish and Wildlife Service | USFWS |

| Driver / Effective Date | Summary | Regulating Authority |
|--|--|--|
| 10 CFR 1022, Compliance with Floodplain and Wetlands Environmental Review Requirements | DOE procedures for complying with Executive Order 11988 and 11990, DOE policy regarding consideration of floodplain/wetlands factors in planning and decision-making | DOE |
| Executive Orders (EO) | | |
| EO 11593, Protection and Enhancement of the Cultural Environment / 1992 | Details the responsibilities of federal agencies to preserve, restore, and maintain the historic and cultural environment | DOE as responsible federal agency for SNL facilities |
| EO 11988, Floodplain Management / 1977 | Directs federal agencies to reduce the risk of flood loss, minimize impact to human safety, preserve natural value of floodplains, requires federal agencies to evaluate affects of agency actions on floodplains | DOE as responsible federal agency for SNL facilities |
| EO 11990, Protection of Wetlands / 1977 | Directs federal agencies to minimize destruction, loss, or degradation of wetlands and to evaluate affects of agency actions on wetlands | DOE as responsible federal agency for SNL facilities |
| EO 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations / 1994 | Requires federal agencies to consider the affects of agency actions on minority and low-income populations | DOE as responsible federal agency for SNL facilities |
| EO 13186, Responsibilities of Federal Agencies to Protect Migratory Birds / 2001 | Details the responsibilities of federal agencies to protect migratory birds. In October 2006, DOE and FWS entered into a MOU establishing protocols to provide guidance for DOE to incorporate migratory bird protection and conservation more fully into its programs in accordance with EO requirements. | DOE as responsible federal agency for SNL facilities |
| DOE Directives | | |
| Order 450.1, Environmental Protection Program / 2005 | Outlines the basic strategy for environmental compliance at DOE facilities, requires DOE facilities to implement an EMS that addresses protection of site resources and long-term stewardship of these resources | DOE |
| Policy 141.1, Management of Cultural Resources / 2001 | Establishes requirement for Cultural Resources Management Plan for all DOE sites | DOE |
| Order 231.1A, Environment, Safety, and Health Reporting / 2004 | Requires collection, reporting, analysis, and dissemination of information on ES&H issues at DOE facilities | DOE |
| California Laws and Regulations^a | | |
| California Endangered Species Act / 1984 | Provides for the designation and protection of wildlife and plant species in California | California Department of Fish and Game |
| California Fish and Game Code | Details the requirements related to all aspects of native wildlife and habitat in California, includes protections for mountain lions, California ground squirrels, and other native species | California Department of Fish and Game |
| 14 CCR Division 1, Subdivision 3, Chp. 6 / 1998 | Implementing regulations for the California Endangered Species Act | California Department of Fish and Game |
| California Environmental Quality Act / 1970 | Requires state and local agencies to identify the significant environmental impacts of their actions and to avoid or mitigate those impacts, applicable to SNL/CA operations through state and local agency permitting processes | State / local agencies issuing permits or approvals |

| Driver / Effective Date | Summary | Regulating Authority |
|--|--|----------------------|
| Other Requirements | | |
| CPR 400.1.2, Integrated Safety Management System Description / 2006 | Defines the requirement to implement ES&H at all SNL locations | SNL |
| Biological and Conference Opinion for SNL/CA Operations / 2004 | Details the requirements for protection of listed species and critical habitat at SNL/CA established through consultation under Section 7 of the Endangered Species Act | USFWS |
| SNL/CA Requirements for Interacting with Wildlife / 2003 | Defines the do's and don'ts of interacting with wildlife at SNL/CA to ensure safety of the workforce and respect for wildlife | SNL/CA VP |
| No-till policy / 2000 | Ensures protection of ground-dwelling amphibians in the outer perimeter areas of SNL/CA | NNSA/SSO |
| Survey protocol for California red-legged frog / 2005 | To avoid and minimize the potential of harassment or harm to red-legged frogs, no additional surveys will be conducted in an area once occupancy has been established The Service should be notified in writing by the surveyor within three (3) working days once a red-legged frog is detected. | USFWS |
| U.S. District Court, Northern District of California, Stipulated Injunction and (Proposed) Order, Case No. C-02-1580-JSW | Settlement agreement between EPA and Center for Biological Diversity, requires EPA to consult with the USFWS over a three-year period on the impacts of 66 pesticide ingredients to the red-legged frog, agreement imposes restrictions on the use of these pesticides in red-legged frog habitat until consultations are complete and biological opinions are issued by the USFWS. To date, EPA has completed risk determinations for 10 pesticide ingredients; however, no biological opinions have been issued. | EPA, USFWS |

^a For federal and state regulations, the current year is the applicable effective date.

Planning and Ecology is audited occasionally by NNSA/SSO, Sandia Corporation, and Lockheed Martin, Sandia's parent company. There are no recurring audits of the program from external regulating agencies. Program activities were included in two surveillance audits conducted in 2007 to maintain ISO 14001 registration. No non-conformances were identified in the Program. SNL/CA NEPA activities were included in one corporate assessment. The results of this assessment are presented in Section 8.5.

The Program Lead communicates with NNSA/SSO counterparts regularly to keep them informed of issues and trends of importance to the program. Program staff works side-by-side with NNSA/SSO to resolve concerns and to develop effective approaches to program implementation. Planning and Ecology and NNSA/SSO maintain an open and cooperative working relationship.

3 Operational Controls

Planning and Ecology uses technical work documents, administrative and engineered controls, and specialized equipment as operational controls. Table 4 lists the technical work documents applicable to Planning and Ecology operations. They include the corporate ES&H manual, operating procedures, preliminary hazard screening documents, hazard assessments, and other site-specific requirements. Fences function as engineered controls to minimize contact between the site population (visitors and employees) and wildlife. Administrative controls include access lists to the outer perimeter areas where potential encounters with wildlife are highest. Trail cameras gather information on wildlife that is used to assess safety conditions in the outer perimeter areas of the site and to support decisions to delay or proceed with wildlife surveys during night hours.

Operational controls for the NEPA process include the Interdisciplinary Team and administrative control in many project-funding processes that trigger a review before a project starts. NEPA triggers are included in processes for work-for-others, laboratory directed research and development, cooperative research and development agreements, integrated contract orders, defense programs, and construction programs.

Table 4 Technical Work Documents for the Environmental Planning and Ecology Program

| Title | Current Version |
|---|------------------------|
| OP471343, Operating Procedure for Conducting NEPA Activities at SNL/CA | Issue J, 2008 |
| PHS SNL3A00248-004, Environmental Planning and Ecology Program at SNL/CA | November 2007 |
| Hazard Assessment, Wildlife Surveys | 2004 |
| OP471793, Operating Procedure for Safely Conducting Wildlife Surveys and Habitat Monitoring at SNL/CA | Issue F, 2007 |
| ES&H Manual, Section 10B, NEPA, Cultural Resources, and Historic Properties | June 2007 |
| ES&H Manual, Section 10C, Migratory Birds, Protected Species, and Other Biota | March 2006 |
| SP473544, Standard Operating Procedure for Roof Access | Issue A, 2005 |
| Mountain Lion Action Plan | April 19, 2004 |
| SNL/CA Requirement for Interacting with Wildlife | June 17, 2003 |
| OP471680, ES&H, Security, and Facilities Interdisciplinary Team Process for the Evaluation of Proposed Site Projects and Activities | Issue G 2005 |
| OP472208, Off-Road Access | Issue B 2007 |

4 Documents Produced

Table 5 identifies the documents and reports generated by Planning and Ecology. There were no significant changes to Program documents or reports in 2007.

Table 5 Environmental Planning and Ecology Program Documents and Reports

| Document / Reporting Requirement | Due Date | Frequency of Distribution | Distribution | Purpose |
|---|------------------------------|----------------------------------|----------------------------------|---------------------------------------|
| Site-wide Environmental Assessment of SNL/CA: provides bounding impact scenario for site operations for ten years | None | Every 10 years | Unlimited public release | DOE requirement |
| Biological Assessment for Continued Operation of SNL/CA: Analysis of impacts to protected wildlife and habitat | None | Every 10 years | USFWS, NNSA/SSO | Regulatory requirement |
| Cultural Resources Management Plan: Identifies the process that will be followed if cultural resources are found | November 30 | Every 5 years | NNSA/SSO | DOE requirement |
| Planning and Ecology Program Report: Summary of program elements | February 15 | Annual | Site | EMS Program |
| EMS Program Manual: Concise description of the overall EMS Program | April 15 | Annual | Site | Supports EMS Program |
| Wildlife Survey Report: Documents results of annual wildlife monitoring | March 30 | Annual | EP Program | Informational |
| SNL/CA Site Environmental Report (final draft): Summary of environmental compliance, environmental program performance, and monitoring activities | June 1 | Annual | Unlimited public release | DOE requirement |
| NEPA Report: Documents NEPA project reviews | 15 days after month end | Monthly | NNSA/SSO | Informational |
| California Natural Diversity Database | As needed | As species are identified | State of California and NNSA/SSO | Regulatory requirement, informational |
| California red-legged frog and California tiger salamander observations | Within 3 days of observation | As needed | USFWS and NNSA/SSO | Regulatory requirement |

5 Approved Job Descriptions, Qualifications, and Job-Specific Training

5.1 Planning and Ecology Job Assignments

Job assignments in Planning and Ecology include Program Lead, Wildlife Biologist, Wildlife Technologist, and Wildlife Biology Intern. Job descriptions and qualifications for each assignment follow. Appendix B provides a list of personnel supporting each job assignment.

Sandia views training, development, and education as a strategic investment in Sandia's future. The policy of Sandia Corporation is to maintain a high level of technical and administrative competence in support of its mission. In support of this policy, Sandia maintains a set of general corporate training requirements that cover a wide range of areas such as security (physical, information, computer), business ethics and diversity, general ES&H, and general business processes. Standard corporate requirements are identified for each individual in the online Corporate Education, Development, and Training database at

<https://hrprod.sandia.gov/cfdocs/prod/hris/ctd/apps/cedtweb/cedtmain/index.cfm>. The online database tracks completion status for all corporate training requirements and provides electronic reminders when a course is due. Sandia training coordinators and department managers identify corporate training requirements for new hires. Sandia has developed online training courses to meet many of these requirements.

In addition to corporate training requirements, each program assignment has job-specific training requirements. These training requirements address safety as well as specific job functions. The Environmental Management Department Manager, Program Lead, or Department ES&H Coordinator may identify job-specific training requirements. Most of these requirements are tracked in the online database. Table 6 presents job-specific training requirements for Planning and Ecology.

5.1.1 Planning and Ecology Program Lead

The Program Lead is responsible for management and oversight of all program activities, interacting with the NNSA/SSO on all NEPA, ecological, and cultural resource issues, interacting with state and federal regulatory agencies, and participating on the IDT. Management and oversight responsibilities encompass a range of activities including budgeting, monitoring costs, identifying investments needs, task assignment and oversight, contract management, conducting program self assessments, maintaining the program website, reporting, developing operational controls, and participating in special site events and department projects. The Program Lead serves as the NEPA subject matter expert for SNL/CA. The Lead is responsible for monitoring changes in program compliance drivers and for communicating these changes to the site.

At a minimum, the Program Lead is required to hold a Bachelor of Art degree with at least 10 years experience in an environmental field, or a Bachelor of Science degree in an engineering, environmental, or science field with three years of related work experience. Desirable qualifications for this position include proficiency in technical writing, project management skills, and NEPA expertise. Registration as an environmental manager is optional, but encouraged, for the Program Lead position.

5.1.2 Wildlife Biologist

The Wildlife Biologist is responsible for all aspects of wildlife monitoring, conducting wildlife surveys, documenting the results of monitoring and surveys, and providing training to maintenance personnel to meet requirements established in the Biological and Conference Opinion for SNL/CA operations. The Wildlife Biologist serves as the contact for SNL/CA workers to report observations of California red-legged frogs, California tiger salamanders, and other wildlife.

The Wildlife Biologist is required to hold, at a minimum, a Bachelor of Science degree in wildlife biology or ecology. The physical demands of this position include walking off-path in steep terrain, riparian habitat, and grassland areas. Consequently, the Biologist must be physically capable of withstanding the physical demands of the job. Regulatory standards for conducting surveys and training require that a qualified field biologist (as determined by the

USFWS) hold this position. Desirable qualifications for this position include familiarity with California fauna and experience with Federal and state regulations related to wildlife.

5.1.3 *Wildlife Technologist*

The Wildlife Technologist assists the Wildlife Biologist with wildlife monitoring and surveys. This position supports the two-person rule for access to the outer perimeter area.

The physical demands of this position include walking off-path in steep terrain, riparian habitat, and grassland areas. Consequently, the Wildlife Technologist must be physically capable of withstanding the physical demands of the job. Desirable qualifications for this position include three years work experience in an engineering, environmental, or science field, and an interest in wildlife or ecology.

5.1.4 *Wildlife Biology Intern*

The Wildlife Biology Intern assists with wildlife monitoring and surveys under the direction of the Wildlife Biologist. The intern position also assists the Program Lead with distributing wildlife posters and other informational materials to the site. This position supports the two-person rule for access to the outer perimeter area.

Student interns at SNL/CA must be currently enrolled full-time students (12 units or more) with a grade point average of 3.2 or better. This intern position also requires a college student with coursework in biology, ecology, or a related field. The physical demands of this position include walking off-path in steep terrain, riparian habitat, and grassland areas. Consequently, the Wildlife Biology Intern must be physically capable of withstanding the physical demands of the job. Desirable qualifications for this position include an interest in wildlife or ecology.

Table 6 Environmental Planning and Ecology Program Training Matrix

| Training Requirement | Training Method | Program Lead | Wildlife Biologist | Wildlife Technologist | Wildlife Biology Intern |
|---|---------------------|--------------|--------------------|-----------------------|-------------------------|
| ENV120 NEPA Awareness | Online | • | | | |
| FRP106 Fire Extinguisher Training Hands-On | SNL classroom | • | • | • | • |
| SBS701 Managing Contracts Effectively for SDRs | Online | • | | | |
| FPP105CA Fall Protection and Prevention | SNL classroom | • | • | • | |
| CNF105 Confined Space | SNL classroom | | • | | |
| CNF107 Confined Space | SNL classroom | | • | | |
| Animal Track Identification | Outside expert | • | • | | |
| Animal Track Awareness (provided by Wildlife Biologist) | On the job training | | | • | • |
| ESH300 Self Assessment | Online | • | | | |
| ESH100 ES&H Awareness | Online | • | • | • | • |
| Overview of Program PHS and OP for Conducting Wildlife Surveys (provided by Program Lead) | Program meeting | | • | • | • |
| ENV112C Hazardous Waste Generator Trainer | Online | | • | • | • |

5.2 Specialized Assignments / Certifications

The Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) requires persons that use or supervise the use of restricted pesticides to be certified pesticide applicators. To meet this requirement, SNL/CA's Maintenance Engineering Department employs a certified pesticide applicator. Certification is valid for a two-year period and requires 20 hours of continuing education for renewal. Certification for the Sandia pesticide applicator is valid through December 31, 2009. Training and renewal for this certification is tracked by Maintenance Engineering.

6 Performance Measures

EMS objectives that are applicable to Planning and Ecology include providing exceptional environmental management and enhancing the natural habitat.

6.1 Exceptional Environmental Management

Planning and Ecology provides exceptional environmental management through involvement in site projects early in the planning stage. The goal of early involvement is to minimize project delays and ensure that site actions do not result in program-related violations, fines, or environmental occurrences. In 2007, there were no violations, fines, or environmental occurrences related to Planning and Ecology program elements.

One measure of early involvement in project planning is lead-time for completing NEPA reviews. Planning and Ecology considers eight days, or more, adequate lead-time to complete routine NEPA reviews. For projects outside the scope of the SWEA, additional lead-time is required for an NNSA/SSO NEPA determination. Figure 4 presents lead-time data for fiscal years 2006 and 2007. As shown, Planning and Ecology received adequate lead-time for 75 percent of NEPA reviews completed in FY 2007, up from 60 percent in 2006. Data reflect the number of days between initiation of a NEPA review and project start-date. Lead-time improvements are primarily attributed to streamlining efforts for reviews of reimburseable projects (LDRDs, WFO's, CRADA's) and routine maintenance and operations actions that are documented under two comprehensive NEPA checklists approved by NNSA/SSO in 2007.

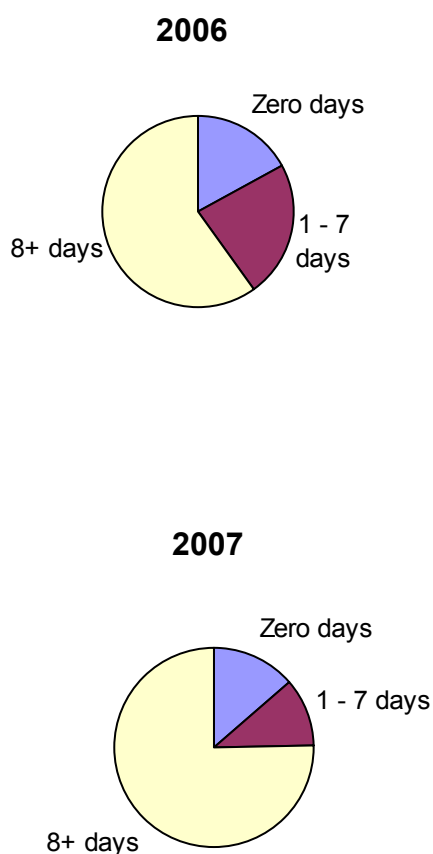


Figure 4 NEPA Lead-Time Statistics

For the ecology component of the program, environmental excellence is maintained by conducting pre-activity surveys for nesting birds and other wildlife prior to start of project activities. During 2007, Planning and Ecology completed 37 pre-activity surveys resulting in schedule modifications for four routine maintenance actions. Using the pre-activity survey

process, SNL/CA is able to avoid disturbance to nesting birds and other wildlife and ensure compliance with requirements.

6.2 Enhance the Natural Habitat

6.2.1 *Biological Diversity and Species Richness*

Annually, Planning and Ecology monitors for wildlife species at SNL/CA. Figure 5 presents species richness data by wildlife category since 2001. As shown, the number of wildlife species observed at SNL/CA in 2007 decreased in several categories. For amphibians, the decrease is due to a dryer than normal wet season. The difference in number of bird species observed is primarily attributed to the lack of occasional or accidental observations of migrant species.

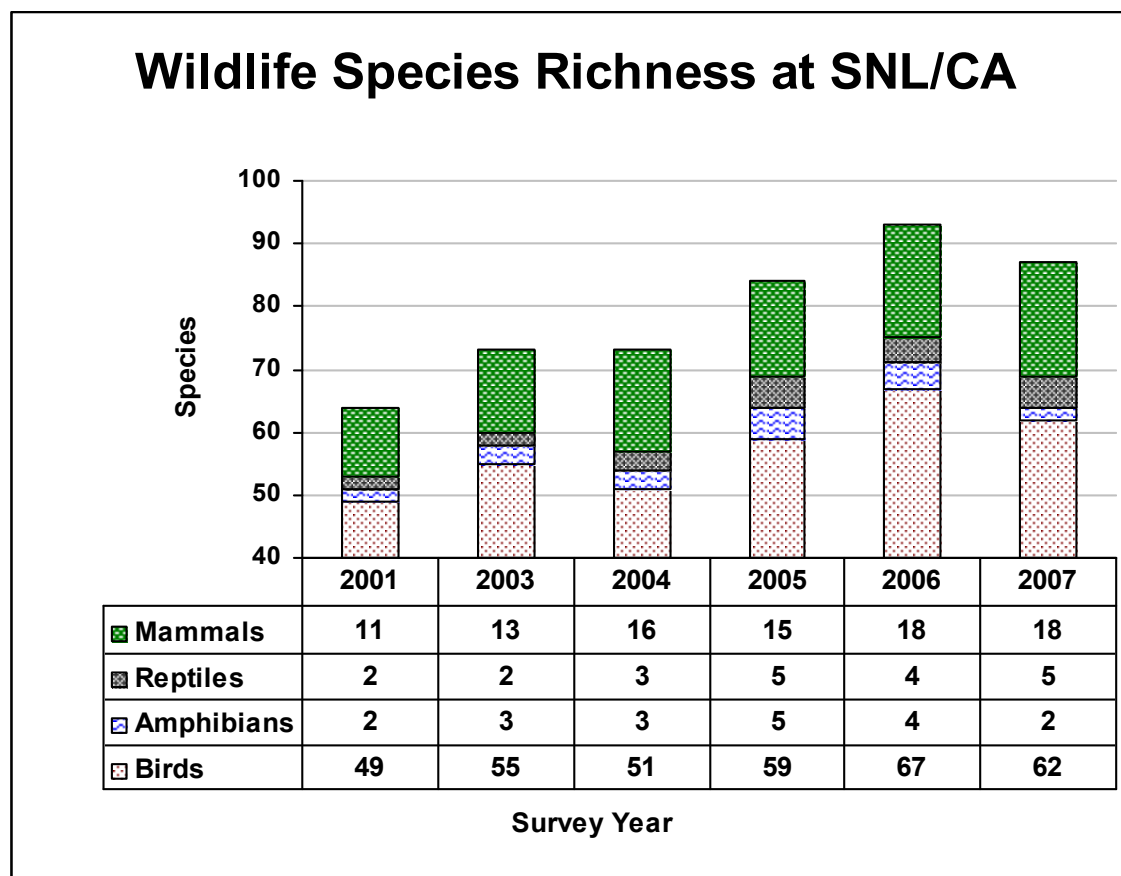


Figure 5 Wildlife Richness at SNL/CA, 2001 - 2007

The biological diversity index for 2007 (Figure 6) provides a baseline for comparison against future years that can be used to evaluate success of land management efforts in enhancing habitat. A diversity index is a popular and simple method used to summarize species richness and abundance data. The calculation used here (Simpson's Diversity Index), takes into account species richness (the number of different species present at SNL/CA in 2007) and evenness (the

relative abundance of the different species observed). The value of the index ranges from 0 to 1 with higher values representing greater ecological diversity. The data shows that overall SNL/CA has a high degree of biodiversity. However, within specific categories of wildlife such as reptiles and amphibians, the richness and abundance of species is moderate or low.

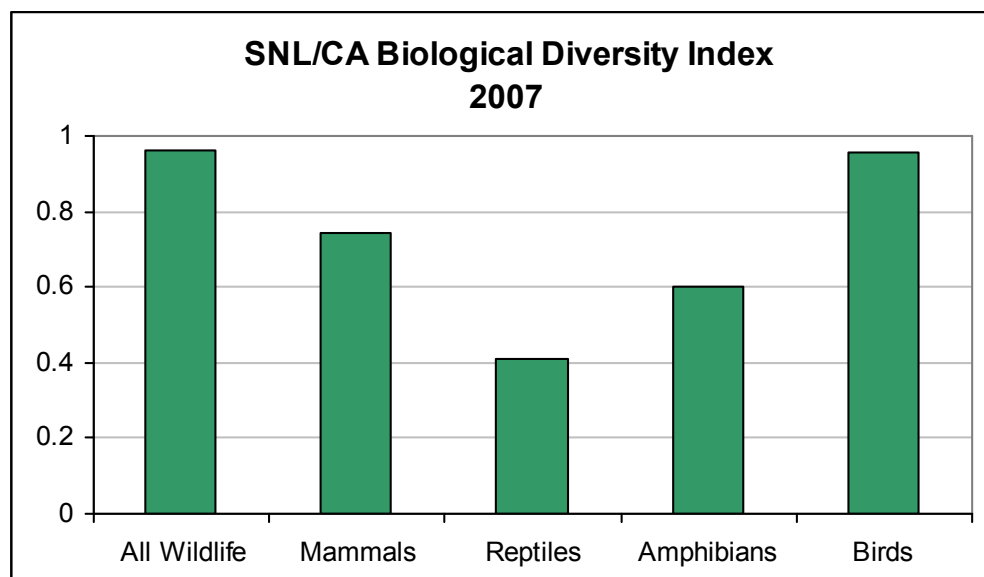


Figure 6 SNL/CA Biodiversity Index, 2007

6.2.2 Arroyo Seco Improvement Program

During 2007, no restoration tasks under the Arroyo Seco Improvement Program were undertaken because the regulatory permit that would allow work to continue was delayed. SNL/CA expects to receive the permit in 2008. Planning and Ecology personnel monitored the 0.05 acres of riparian habitat restored in 2006 for plant survival and growth and habitat use. Figure 7 presents the survival rate of trees planted at two locations in Arroyo Seco in 2006. As shown, the first year survival rate is well below the 85% goal. During spring 2008, Planning and Ecology will replant willow cuttings that did not survive.

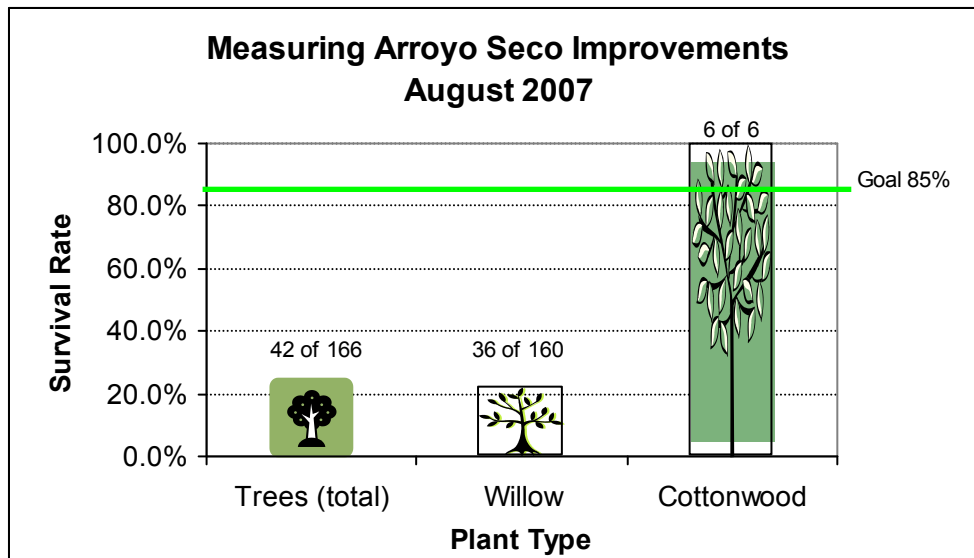


Figure 7 Plant Survival of Restored Arroyo Seco Areas

The biodiversity of bird species at three locations along Arroyo Seco is presented in Figure 8. Success criteria established for Arroyo Seco restoration include use of restored areas by bird species similar to other areas of the arroyo on SNL/CA property. In 2006, restoration occurred in the northwest and central sections of Arroyo Seco. Wildlife monitoring data for 2007 indicate that the diversity of birds in the northwest portion of the arroyo is less than central and southeast locations. SNL/CA expects that as the plant survival rate improves and canopy cover develops, biodiversity in the northwest section will also improve.

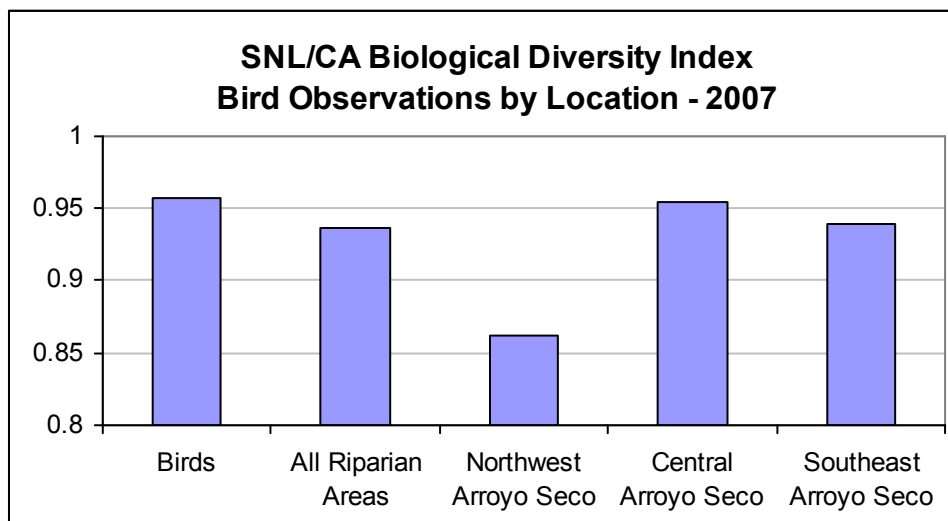


Figure 8 Biodiversity of Bird Species Along Arroyo Seco

6.2.3 Grassland Habitat

In 2007, SNL/CA experienced a decrease in the growth of Italian thistle, an invasive plant species, in grassland habitat in the eastern portion of the site. In 2007, there were approximately

6 acres of thistle compared to 12 acres in 2006 (Figure 9). The decrease in thistle is attributed to a below normal rain year and mowing of grassland areas before thistle species could go to seed. SNL/CA will continue to mow grassland areas as a way of minimizing spread of this invasive species.

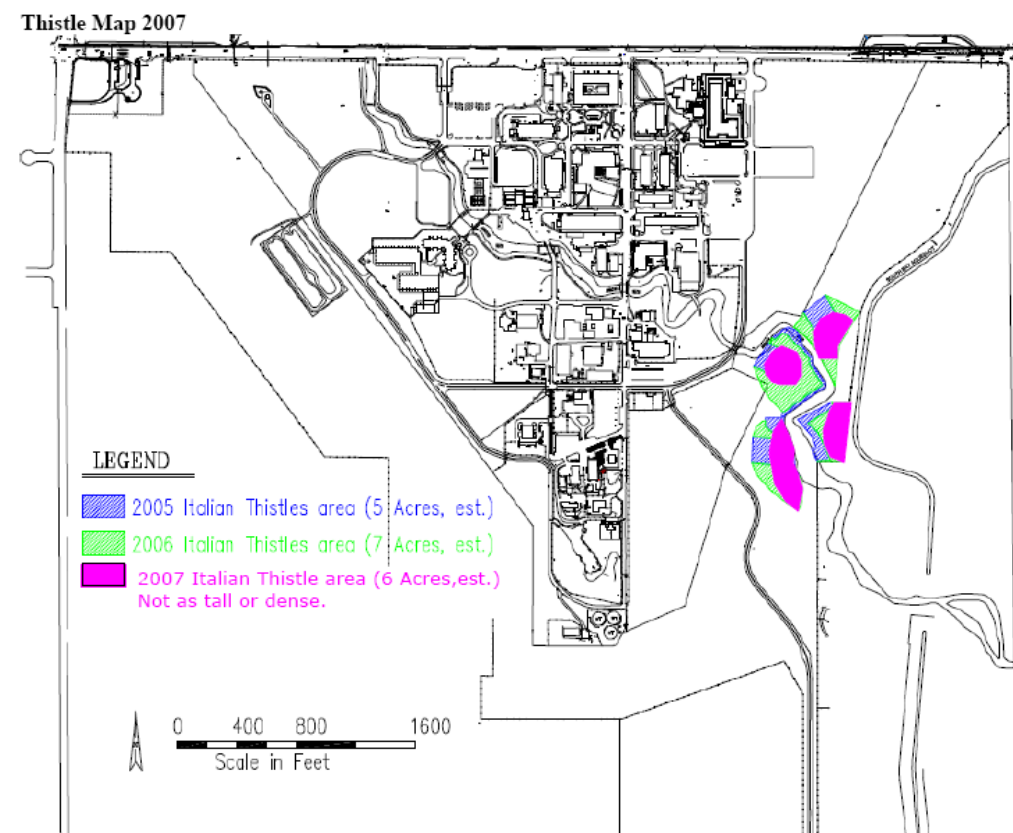


Figure 9 Italian Thistle in Grassland Habitat at SNL/CA

7 Quality Assurance

7.1 Program Risk Assessment

In January 2008, Planning and Ecology updated the program risk assessment and identified four potential risks related to program activities. Table 7 lists each risk and the calculated risk category. The complete risk assessment is included in Appendix C.

Table 7 Planning and Ecology Program Risks 2008

| Risk # | Risk | Risk Category |
|--------|--|---------------|
| 1 | Revision of California red-legged frog critical habitat | high |
| 2 | Delay in receiving approval for recharge basin restoration project | high |
| 3 | Taking of a protected species | medium |
| 4 | Reduction in program funding by 10% | medium |

To date, the USFWS has not set a date for revision of critical habitat for the California red-legged frog. In response to the high-risk category for Risk 1, Planning and Ecology will continue to monitor notices from USFWS and other related information sources to ensure review of the draft critical habitat designation.

The USFWS considers the recharge basin area upland habitat for the California tiger salamander. Consequently, backfilling and designation of the area for future construction requires formal consultation with the USFWS and a 3 to 1 mitigation set-aside. In May 2007, SNL/CA submitted a mitigation proposal to NNSA/SSO for review and approval. The proposal is still pending review by SSO staff. In response to the high-risk category for Risk 2, Planning and Ecology will work with SSO to develop a realistic schedule for review of the mitigation proposal, preparation of an amendment to the existing biological opinion, and submittal of a request for formal consultation to the USFWS.

In response to the medium risk category for Risk 3, the Wildlife Biologist conducts pre-activity surveys prior to start of work with potential to affect wildlife. Planning and Ecology staff also conduct awareness briefings for Engineering Maintenance personnel, participates in construction tail gate meetings, and attends Interdisciplinary Team meetings to identify projects that require pre-activity surveys and / or actions to avoid disturbing wildlife.

In response to the medium risk category for Risk 4, Planning and Ecology prepared two comprehensive NEPA modules that address routine maintenance operations and research projects from reimburseable funding sources. These comprehensive NEPA reviews reduce labor hours required to prepare NEPA modules, to review proposed projects, and to document NEPA compliance. The comprehensive modules will expire at the end of fiscal year 2008. In 2008, Planning and Ecology will update the comprehensive modules to extend the time period for an additional three years, through fiscal year 2011. Also in 2007, Planning and Ecology created an ecology database using Microsoft Access to manage and compile data collected from wildlife surveys. The ecology database provides an efficient and effective tool for data management. Prior to 2007, data was managed with a simple EXCEL spreadsheet and compilation was accomplished manually. Use of the ecology database will continue in 2008, with expectations of gaining increased efficiencies in data management and reporting.

7.2 Maintaining Program Quality

Planning and Ecology applies the following program-specific elements to assure quality is maintained in data collection, analyses, and reporting.

- Online tools ensure that a standard process is followed for collection and evaluation of project information for all NEPA reviews.
- Internal reports and documents are subjected to internal review and technical editing before finalizing.
- Published reports are reviewed by NNSA/SSO, applicable SNL/CA staff, and technical editors before finalizing.
- Standard industry and regulatory protocols are followed for conducting wildlife surveys.

- Wildlife survey forms are completed by the Wildlife Biologist in the field.
- Wildlife survey data is input to the ecology database in a timely fashion, generally within a few days to ensure monitoring data is accurate, accessible, and up-to-date.

8 Program Assessments

Planning and Ecology conducts two routine self-assessments annually. The program self-assessment is focused on individual elements of program operations. The line performance assessment addresses line implementation of program requirements.

8.1 Follow-up on 2006 Program Assessments

In 2006, Planning and Ecology assessed implementation of pre-activity survey requirements for nesting birds. The assessment found that the pre-activity survey process is functioning effectively. No follow-up actions were required.

8.2 Program Self-Assessment

In 2007, Planning and Ecology completed a program self-assessment that reviewed all technical work documents, processes, and web pages. The results of this assessment are documented on a Program Document Review form (Figure 10).

8.3 Line Performance Assessment

Planning and Ecology completed a line performance assessment during September and October 2007. The 2007 line performance assessment focused on implementation of NEPA compliance for projects requiring an Institutional Biosafety Committee (IBC) review. Nineteen IBC agreements for fiscal years 2006 and 2007 were reviewed for compliance with NEPA. Fourteen could be mapped directly back to a NEPA module review. The remaining five IBC agreements were difficult to map back to a NEPA review because the agreements were for specific tasks under a broader project review. The assessment also found that NEPA modules often did not include specific biological materials that were used. As a result of this assessment, the NEPA SME recommended including the NEPA identification number on IBC agreements and updated the SNL/CA NEPA Administrative Procedure to ensure that specific biological materials are listed in the NEPA module.

8.4 Environmental Program Representative Assessment

For 2007, Planning and Ecology did not request assessment support from the Environmental Program Representative.

8.5 Corporate / Line Self Assessment

During 2007, the Planning and Ecology Program was included in one corporate assessment focused on NEPA compliance for nuclear weapons funded projects. For ongoing projects under this funding source, the project manager compares the scope of work for the upcoming fiscal

year against the existing NEPA module and either documents continuation of existing activities in the comment log or prepares a new NEPA module if the scope of work has changed. One SNL/CA project was identified that had not been through the project manager's review.

Program Document Review

| Document Type | Document Title | Review Complete | Changes Made |
|---------------------------|---|---|---|
| Operating Procedure | NEPA Reviews of Proposed Projects at SNL/CA (OP471343) | <input checked="" type="checkbox"/> 8/14/07 | <input checked="" type="checkbox"/> Yes changes needed April 08 <input type="checkbox"/> No |
| | Safely Conducting Wildlife Surveys in the Outer Perimeter Area (OP471793) | <input checked="" type="checkbox"/> 8/14/07 | <input checked="" type="checkbox"/> Yes changes needed 3/08 on heat stress, fire safety <input type="checkbox"/> No |
| PHS | SNL3A00248-005 Environmental Planning and Ecology Program at SNL/CA | <input checked="" type="checkbox"/> 8/14/07 | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |
| ES&H Manual | Section 10B - NEPA, Cultural Resources, and Historic Properties | <input checked="" type="checkbox"/> 6/25/07 and 8/13/07 | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |
| | Section 10C – Migratory Birds, Protected Species, and other Biota | <input checked="" type="checkbox"/> 8/14/07 | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |
| Other Program Documents | Program Report | <input checked="" type="checkbox"/> 3/07 | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |
| | Cultural Resources Management Plan | <input checked="" type="checkbox"/> 8/14/07 | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |
| | Mountain Lion Action Plan | <input checked="" type="checkbox"/> 8/14/07 | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |
| | Site Requirements for Interactions with Wildlife | <input checked="" type="checkbox"/> 8/14/07 | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |
| | Biological Assessment (and Addendum) for Continued Operation of SNL/CA | <input checked="" type="checkbox"/> 8/14/07 | <input checked="" type="checkbox"/> Yes addendum needed for recharge basin backfill – scheduled for 2008 <input type="checkbox"/> No |
| | Biological and Conference Opinion for continued operation of SNL/CA | <input checked="" type="checkbox"/> 8/14/07 | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |
| Web Pages | Env Planning and Ecology Web pages | <input checked="" type="checkbox"/> June 2007 | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |
| | Wildlife website (internal only) | <input checked="" type="checkbox"/> June 2007 | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |
| | ASER on external website | <input checked="" type="checkbox"/> June 2007 | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |
| Self-assessment Standards | NEPA | <input checked="" type="checkbox"/> 8/14/07 | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |
| | Wildlife | <input checked="" type="checkbox"/> 8/14/07 | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |

Organization: 8516

Program: Environmental Planning and Ecology

Date: Calendar Year 2007

Signature Program Lead: Barbara Larsen (signature on file)

Figure 10 Environmental Planning and Ecology Program Document Review Form

9 Accomplishments

In 2007, Planning and Ecology supported the following accomplishments.

- On May 18, 2007, NNSA/SSO approved the SNL/CA Site Environmental Report for 2006. Planning and Ecology completed the annual report more than 30 days ahead of SSO's already aggressive schedule that identified completion of the final draft by June 1, 2007.
- In April 2007, Planning and Ecology completed a gap analysis against the ISO 14001:2004 standard. This analysis meets the internal audit requirement for the SNL/CA EMS program for 2007.
- During 2007, SNL/CA's EMS underwent two successful surveillance audits to maintain certification to ISO 14001:2004. Planning and Ecology coordinated activities for both audits.
- Enhancements completed in 2007 to the online NEPA module support the work control process by requiring line management approval of all NEPA modules before completion of the NEPA process.
- Two comprehensive NEPA modules were prepared to increase the efficiency of the NEPA review process for routine maintenance and repair activities and a subset of research projects.

10 Trends

Issuance of the SWEA in 2003 (see Section 1.1) provided the site with a broad envelope for operations over a ten-year period. With the SWEA, Planning and Ecology has the ability to review more than 95 percent of site projects internally, without the need for an NNSA/SSO NEPA determination. Internal reviews are completed quickly (usually within a few hours). Customers experience fewer project delays as a result of the NEPA process, and potential ES&H issues are surfaced early for further evaluation through the IDT process. These trends are likely to continue as long as the SWEA impact analyses remain valid.

Communications about wildlife and ecology are generating increased awareness with the workforce. As a result, Planning and Ecology is receiving more reports of wildlife observations and wildlife concerns. Of particular interest in 2007, members of the workforce reported both observations of California tiger salamanders documented for the year. Increased awareness and cooperation is expected to continue.

Sandia corporate is placing a greater emphasis on using the NEPA module to trigger environmental analyses required of other environmental disciplines. As part of this emphasis, the corporate NEPA team is considering adding a mandatory requirement to include the NEPA ID number in the preliminary hazard screening (PHS) tool. SNL/CA concerns with this approach include the following.

- SNL/CA uses an Interdisciplinary Team process to trigger ES&H reviews.
- There is not a one-to-one relationship between the PHS and NEPA. One PHS can relate to multiple NEPA modules.
- PHS is reviewed and updated annually; NEPA is completed once for a project or activity and does not have an annual review requirement.
- SNL/CA starting using the NEPA Module in 2005, consequently many valid NEPA reviews do not have a NEPA Module link.
- The PHS is a screening tool that should identify requirements not enforce them.
- Proposed changes will increase the NEPA workload at SNL/CA for the NEPA SME as well as project managers.

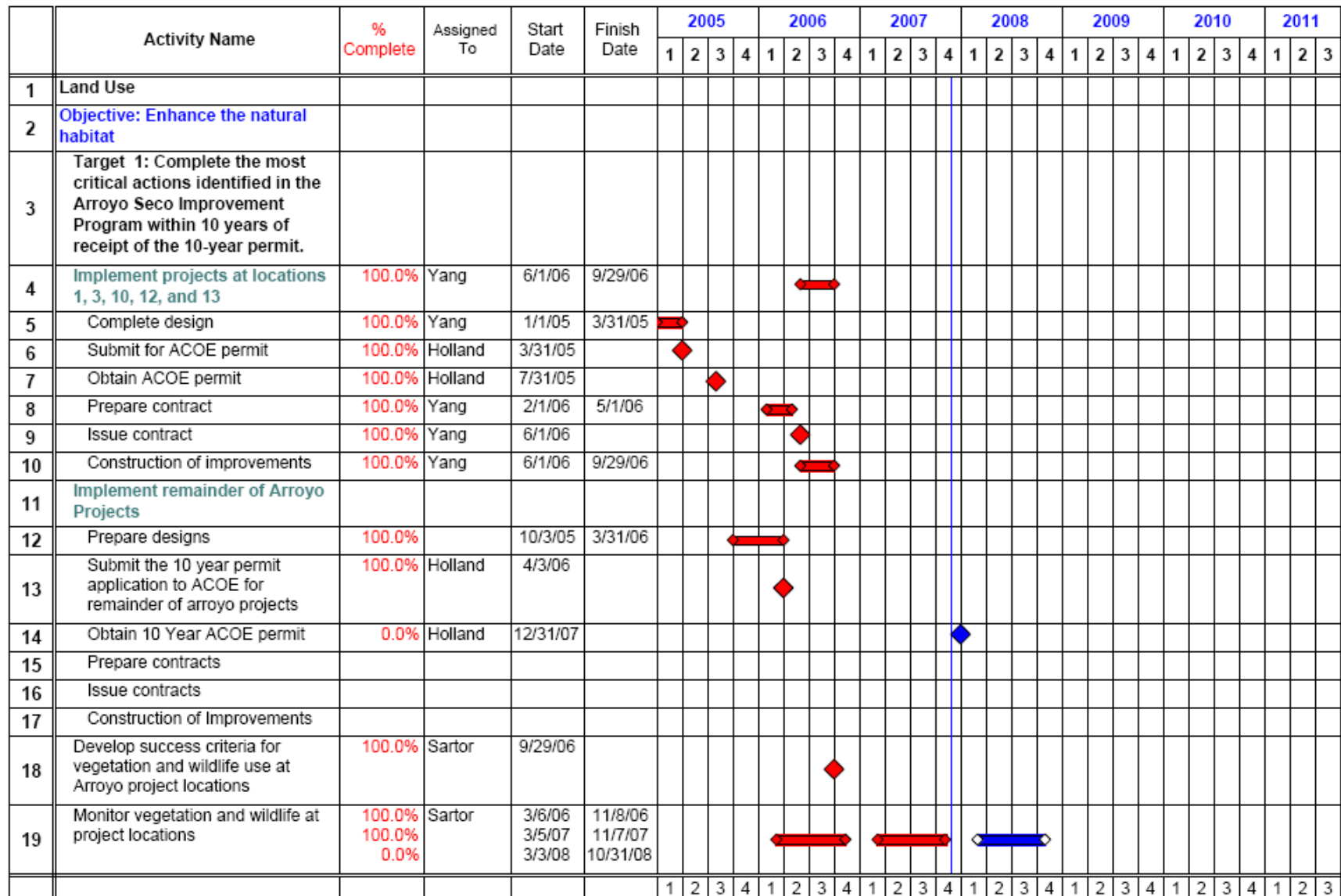
Executive Order (EO) 13423 was issued in January 2007. This EO places greater emphasis on sustainable management of government operations. To implement the EO, DOE is revising two DOE Orders, 450.1, Environmental Protection Program, and 430.2, Departmental Energy, Utilities, and Transportation Management. The revised DOE orders will include greater emphasize on environmental management systems, sustainable practices, and alternative energy. Revised orders are expected to be released in Spring 2008 and incorporated into the Sandia contract shortly thereafter. Changes to SNL/CA's environmental, transportation, and energy programs will be needed to meet new requirements of the DOE orders.

11 Goals and Objectives

Planning and Ecology goals and objectives are to support exceptional environmental management and enhance the natural environment. To support exceptional environmental management, Planning and Ecology participates in site planning activities to integrate environmental objectives. The program also supports efforts to increase published communications and outreach efforts for EMS, another target for this objective. Planning and Ecology supports this target through communicator articles and email notices, annual wildlife presentations to Maintenance Engineering, and participation in pre-construction meetings.

Targets and action items established for the objective to enhance the natural environment are presented in Figure 11. Actions to meet this objective extend out to 2009. This objective supports the land use environmental aspect, one of the significant aspects under the site's EMS Program.

Figure 11 Targets and Actions Supporting Enhancement of Natural Habitat



| | Activity Name | % Complete | Assigned To | Start Date | Finish Date | 2005 | | | | 2006 | | | | 2007 | | | | 2008 | | | | 2009 | | | | 2010 | | | | 2011 | | |
|----|---|------------------------|-------------|-------------------------------|----------------------------------|------|---|---|---|------|---|---|---|------|---|---|---|------|---|---|---|------|---|---|---|------|---|---|---|------|---|---|
| | | | | | | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 |
| 20 | Measure vegetation growth and density annually at project locations | 100.0% 0.0% 0.0% | Sartor | 3/1/07 3/1/08 3/1/09 | 6/30/07 6/30/08 6/30/09 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 21 | Compile and evaluate data from monitoring and measuring | 100.0% 0.0% 0.0% | Sartor | 10/1/07 10/1/08 10/1/09 | 10/31/07 11/3/08 11/3/09 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 22 | Evaluate data and compare against success criteria | 100.0% 0.0% 0.0% | Sartor | 11/1/07 11/1/08 11/1/09 | 12/17/07 12/16/08 12/14/09 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 23 | If needed to meet success criteria, prepare recommendations for additional actions | 100.0% 0.0% 0.0% | Sartor | 1/2/08 1/2/09 1/4/10 | 1/31/08 2/2/09 2/1/10 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 24 | Communicate progress on Arroyo Seco Improvement Program to the workforce by posting updates on the ES&H website | 100.0% | Schermess | 6/1/06 | 10/31/06 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 25 | Obtain updates on arroyo projects from Project Managers at least once per month | 100.0% | Schermess | 6/1/06 | 10/31/06 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 26 | Periodically photograph progress | 100.0% | Schermess | 6/1/06 | 10/31/06 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 27 | Post photos and updates on web monthly | 100.0% | Schermess | 6/1/06 | 10/31/06 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 28 | Prepare completion text for five tasks and post on web | 100.0% | Larsen | 11/1/06 | 11/30/06 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 29 | Enhancement actions without targets | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 30 | Complete the consultation process with U.S. Fish and Wildlife Service to backfill recharge basin | 0.0% | Larsen | 3/31/10 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 |

| | Activity Name | % Complete | Assigned To | Start Date | Finish Date | 2005 | | | | 2006 | | | | 2007 | | | | 2008 | | | | 2009 | | | | 2010 | | | | 2011 | | |
|----|---|------------|-------------|------------|-------------|------|---|---|---|------|---|---|---|------|---|---|---|------|---|---|---|------|---|---|---|------|---|---|---|------|---|---|
| | | | | | | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 |
| 31 | Submit letter to USFWS requesting approval to backfill basin | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 32 | Prepare draft letter and submit to SSO for review | 100.0% | Larsen | 5/17/06 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 33 | 4-month follow-up with SSO | 100.0% | Larsen | 9/29/06 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 34 | SSO to finalize letter to USFWS | 100.0% | SSO | 10/6/06 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 35 | SSO to submit request to USFWS | 100.0% | SSO | 10/6/06 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 36 | Follow-up with USFWS on status of request to backfill recharge basin | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 37 | Identify contact person at USFWS | 100.0% | Larsen | 10/25/06 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 38 | Conduct on site meeting with FWS and SSO | 100.0% | Larsen | 12/13/06 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 39 | Discuss results of FWS meeting and options to proceed (or not) with basin backfill | 100.0% | Larsen | 1/29/07 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 40 | Review FWS meeting results and SSO recommendations with Sandia site management - identify path forward | 100.0% | Shamber | 3/30/07 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 41 | Evaluate potential construction and wildlife setaside areas for consistency with site Long Range Plan (Facilities Eng) | 100.0% | Garcia | 4/30/07 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 42 | Evaluate potential construction and wildlife setaside areas for consistency with environmental goals and benefits to wildlife | 100.0% | Larsen | 8/15/07 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 43 | Provide recommendations for construction areas and wildlife setaside to SSO | 100.0% | Larsen | 8/31/07 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 |

| | Activity Name | % Complete | Assigned To | Start Date | Finish Date | 2005 | | | | 2006 | | | | 2007 | | | | 2008 | | | | 2009 | | | | 2010 | | | | 2011 | | |
|----|--|------------|-------------------|--------------------|-------------|------|---|---|---|------|---|---|---|------|---|---|---|------|---|---|---|------|---|---|---|------|---|---|---|------|---|---|
| | | | | | | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 |
| 44 | Reach agreement on construction and setaside areas with SSO | 0.0% | SNL / SSO | 1/31/08 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 45 | Prepare draft documentation to support the consultation process | 0.0% | Larsen | 4/30/08 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 46 | SNL/CA internal review of documentation | 0.0% | Larsen Shamber | 5/30/08 5/30/08 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 47 | Incorporate internal review comments into draft | 0.0% | Larsen | 6/30/08 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 48 | Submit to SSO for review | 0.0% | Larsen | 6/30/08 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 49 | Receive SSO comments | 0.0% | Larsen | 8/31/08 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 50 | Incorporate SSO comments | 0.0% | Larsen | 9/30/08 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 51 | Transmit final draft to SSO for submittal to USFWS | 0.0% | Larsen | 10/31/08 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 52 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 53 | Objective 2: Design and manage all buildings and facilities using "green" principles | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 54 | Target 1: Certify one site facility to LEED EB rating by the end of FY 08 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 55 | Arrange for SNL/NM to conduct LEED training to facilities engineering/PM | 100.0% | Harris | 5/1/07 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 56 | Hold LEED training | 100.0% | Garcia | 5/22/07 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 57 | Conduct preliminary review of B929 for LEED EB | 100.0% | Garcia | 5/23/07 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 58 | Prepare LEED EB application | 50.0% | NM | 9/3/07 | 11/30/07 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 59 | Submit LEED EB application | 0.0% | NM | 11/30/07 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 60 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 61 | Green actions without targets | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 |

| | Activity Name | % Complete | Assigned To | Start Date | Finish Date | 2005 | | | | 2006 | | | | 2007 | | | | 2008 | | | | 2009 | | | | 2010 | | | | 2011 | | |
|----|--|------------|-------------|------------|-------------|------|---|---|---|------|---|---|---|------|---|---|---|------|---|---|---|------|---|---|---|------|---|---|---|------|---|---|
| | | | | | | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 |
| 62 | Perform a gap analysis between current maintenance practice and green maintenance practice | 0.0% | Larsen | 12/22/08 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 63 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 64 | RETIRED TARGETS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 65 | The following target was retired in September 2007. SNL/CA determined that it is not practical or feasible to create a formal Landscape Maser Plan. Environmental design elements will be incorporated into site landscaping on a project by project basis. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 66 | Target: Update the site Landscape Master Plan to integrate improved environmental design elements including the greater use of native plants, the incorporation of storm water runoff controls, erosion controls and natural shading, etc. (December 31, 2008) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 67 | Consult with SNL/NM on the feasibility of them working on a site update to our masterplan | 100.0% | Garcia | 6/29/07 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 68 | Develop environmental design criteria to be incorporated into plan. | 100.0% | Shamber | 1/15/07 | 5/31/07 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 69 | Initiate contract to start updating Landscape Master Plan | 100.0% | Taylor | 8/10/07 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 70 | Schedule and participate in kick-off meeting with contractor | 100.0% | Shamber | 8/10/07 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 71 | | 0.0% | EMS Team | 8/17/07 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 |

Appendix A

Requirements from Biological and Conference Opinion and Associated Documents

Summary of Wildlife and Habitat Mitigation Measures Biological and Conference Opinion for Sandia National Laboratories, California December 8, 2004

General mitigation measures

- This opinion applies to site operations as designated on the Figure 2.
- The 106-acre wildlife reserve is not available for public access or recreational use.
- Only individuals with a valid Scientific Collection Permit can handle (capture and release) California red-legged frogs or California tiger salamanders.
- Provide training to all construction, landscape, and maintenance personnel conducting activities that may affect red-legged frogs or tiger salamanders. Training to include species description, habitat description, and protective measures for the species. The trainer must be approved by the Fish and Wildlife Service (i.e. qualified wildlife biologist).
- Capture and relocation protocols shall be approved by the Fish and Wildlife Service and the California Department of Fish and Game prior to implementation.
- Prior to relocating individual red-legged frogs or tiger salamanders, the Fish and Wildlife Service must approve the relocation site.
- Report to the Fish and Wildlife Service immediately when:
 - any listed species is found onsite
 - accidental take or injury of a red-legged frog or tiger salamander occurs
 - a dead red-legged frog or tiger salamander is found onsite
- SNL/CA shall appoint a representative to serve as a contact for site personnel on all red-legged frog and tiger salamander related issues.
- Report all new sightings of red-legged frogs and tiger salamanders to both the Fish and Wildlife Service and California Natural Diversity Database.
- SNL/CA shall initiate a bullfrog control program, including annual surveys for potential breeding habitat, egg masses, larvae, juveniles, and adults, and removal of all age classes.
- Notify the Fish and Wildlife Service of conservation measures that have been implemented to benefit the red-legged frog and tiger salamander.
- Monitor survival and growth of riparian vegetation planted along Arroyo Seco.
- Prepare a wildlife and habitat management plan.

Construction-related mitigation measures

- Stockpiling of soil can occur in the 95-acre construction zone.
- Annual and pre-activity surveys for California red-legged frogs and California tiger salamanders are required prior to construction activities.
- Planting in and along Arroyo Seco will use only native riparian vegetation. Plants will be a mixture of riparian species commonly found at SNL/CA such as arroyo willow, Gooding's black willow, red willow, Fremont cottonwood, western sycamore, valley oak, mugwort, rush, and native grasses.
- Construction activities within and along Arroyo Seco will be conducted from June 1 through September 30.
- Construction activities will occur during daylight hours.
- New buildings and infrastructure shall be confined to the minimum area necessary to achieve their purpose.
- Where construction areas abut the wildlife reserve, fencing shall be installed to prevent workers from entering the reserve.
- Landscaping in new construction areas shall be designed to minimize water consumption and reduce irrigation runoff to Arroyo Seco.
- Plastic mono-filament erosion control matting shall not be used where red-legged frogs and tiger salamanders may become entangled or trapped, particularly in Arroyo Seco.
- Maintenance-related mitigation measures
- Composting of landscape debris can occur in the 95-acre construction zone.
- Ground squirrel control will not occur in the wildlife reserve.
- Ground squirrel control on the site interior will consist only of trapping and removing.
- Feral cats will be trapped and removed, as needed.
- Maintenance activities within and along Arroyo Seco will be conducted from June 1 through September 30.
- Wetland or riparian vegetation will not be mowed.
- Individual animals will not be sprayed with Round-up or other herbicides.
- Areas within the arroyo channel will not be sprayed with Round-up or other herbicides.
- Ground squirrel burrows will be surveyed for California red-legged frogs and California tiger salamanders prior to backfilling. Surveys will be done by site wildlife biologist using an infrared optical probe.

Appendix B

Personnel Assignments

| Job Assignment | Personnel | Back-Up |
|-------------------------|--------------------------------|----------------|
| Program Lead | Barbara Larsen | Leslee Gardizi |
| Wildlife Biologist | Joanne Mount-Sartor | None |
| Wildlife Technologist | Rebecca Schermesser | John Chavarria |
| Wildlife Biology Intern | Summer Intern to be determined | None |

Appendix C

Environmental Planning and Ecology Program Risk Assessment – January 2008

The risk assessment process for the Environmental Planning and Ecology Program follows the general steps of

1. Identify the risk
2. Identify the probability of the event occurring
3. Identify the consequence if the event occurs.

The following tables will be used to assign a numeric value to the probabilities and consequence categories.

| Likelihood/Probability Of Occurrence Level | Likelihood/Probability Criteria |
|--|--|
| Very High | • Everything points to this occurring |
| High | • <i>High chance</i> • <i>Lack of relevant processes or experience contribute to a high chance of occurrence</i> |
| Medium | • <i>Even chance</i> |
| Low | • <i>Not much of a chance</i> |
| Negligible | • Negligible chance this will occur |

| CONSEQUENCE/ SEVERITY LEVEL | CONSEQUENCE/SEVERITY CRITERIA |
|-----------------------------|---|
| High | <i>damage (e.g., ozone depletion, rad soil contamination) • Serious environmental impact resulting in recovery actions lasting 5 years or more (e.g., TCE in aquifer) • Results in General Emergency (affects both onsite and offsite) • Unsatisfactory rating by external regulators or cease and desist order • Affects lab leadership, including prime contract • Actions, inactions or events that pose the most serious threats to national security interests and/or critical DOE assets, create serious security situations, or could result in deaths in the workforce or general public (i.e., IMI-1) † • Actions, inactions or events that pose threats to national security interests and/or critical DOE assets or that potentially create dangerous situations (i.e., IMI-2) † • Unallowable costs or fines >\$1M • Adverse public opinion – high interest/widespread open public attention or debate (lasting weeks to months) • Customer dissatisfaction results in permanent loss of lab customer • Catastrophic failure to meet internal requirements • Loss of major program within the division (>\$10M)</i> |

| | |
|-------------------|--|
| Medium | <ul style="list-style-type: none"> • Has the potential for adverse impact on Sandia's programmatic performance or the achievement of corporate strategic or operational objectives • Significant injury/illness -fully recoverable with a long recovery time • Significant environmental impact resulting in recovery actions lasting up to 5 years (e.g., major oil spill) • Results in Site/Area Emergency (affects multiple onsite facilities) • One of regulator "hot buttons" (e.g., NNSA, NMED) • Results in increased oversight of limited number of functions • Actions, inactions, or events that pose threats to DOE security interests or that potentially degrade the overall effectiveness of DOE's safeguards and security protection program (i.e., IMI-3) † • Unallowable costs or fines >\$500K and <\$1M • Adverse public opinion – moderate interest, limited PR problems of short duration (days) • Customer dissatisfaction results in partial loss of program • Significant failure to meet internal requirements • Loss of program within division (>\$1M) |
| Low | <ul style="list-style-type: none"> • Minimal injury/illness – Fully recoverable with a short recovery time • Minimal environmental impact that can be improved within days • Results in increased short-term oversight • Results in an Operational Emergency (affects a single onsite facility) • Actions, inactions, or events that could pose threats to DOE by adversely impacting the ability of organizations to protect DOE safeguards and security interests (i.e., IMI-4) † • Unallowable costs or fines <\$500K • Adverse public opinion with short-term local negative publicity or embarrassment |
| Negligible | <ul style="list-style-type: none"> • Little or no attention, might be discussed as lesson learned |

The risk level will be graded according to the following matrix. Adapted from DOE O 471.4.

| RISK GRADING LEVELS | | | | | |
|---------------------------------|-------------------|-----------------------------|---------------|---------------|---------------|
| | | Consequence/Severity | | | |
| | | <i>Negligible</i> | <i>Low</i> | <i>Medium</i> | <i>High</i> |
| Likelihood of Occurrence | <i>Very High</i> | <i>Low</i> | <i>Medium</i> | <i>High</i> | <i>High</i> |
| | <i>High</i> | <i>Low</i> | <i>Medium</i> | <i>High</i> | <i>High</i> |
| | <i>Medium</i> | <i>Low</i> | <i>Medium</i> | <i>Medium</i> | <i>High</i> |
| | <i>Low</i> | <i>Low</i> | <i>Low</i> | <i>Low</i> | <i>Medium</i> |
| | <i>Negligible</i> | <i>Low</i> | <i>Low</i> | <i>Low</i> | <i>Low</i> |

Risks Associated with the Environmental Planning and Ecology Program

1. Revision of California Red-Legged Frog Critical Habitat
2. Delay in Receiving Approval for Recharge Basin Restoration Project
3. Taking of a Protected Species
4. Reduction in Program Funding by 10%

1. Revision of California Red-Legged Frog Critical Habitat

a. Identification of Risk

In November 2007, the U.S. Fish and Wildlife Service (FWS) agreed to revise the critical habitat designation for the California red-legged frog after a former official of the Interior Department was found to have improperly interfered with the scientific conclusion supporting the critical habitat decision. A revision date has not yet been set by the FWS.

In 2002, when the consultation process with FWS began, the Sandia site was within designated critical habitat for the California red-legged frog. In November 2005, the USFWS issued a revised designation and a final rule in April 2006. Under the 2006 final designation, the Sandia site is not included in the critical habitat area. The risk of this regulatory change is that the critical habitat designation for the red-legged frog could revert to the 2002 decision, which includes SNL/CA.

b. Probability of Occurrence

The probability that portions of SNL/CA will be designated as critical habitat is **High**. Assuming that the 2002 decision (that included SNL/CA) was based on sound science, the next revision is likely to result in a similar decision from the FWS.

c. Consequence of Occurrence

The Biological Opinion for site operations states that re-initiation of formal consultation with FWS is required when a new species is listed or critical habitat is designated. The Biological Opinion already includes potential impacts to 45 acres of red-legged frog critical habitat (that was in proposed status at the time the consultation process was completed). If the revised critical habitat designation includes additional acres at the Sandia site, the consultation process will likely need to be re-initiated and a revised Biological Opinion requested. This could stop or delay site operations and maintenance actions in some areas of the site until formal consultation is completed. This consequence is rated as **Medium**.

d. Overall Risk Category

In accordance with the chart above, for a risk with a probability of High with a Medium consequence, the risk category is **High**.

2. Delay in Receiving Approval for Recharge Basin Restoration Project

a. Identification of Risk

The recharge basin located in the western portion of the SNL/CA outer perimeter area was installed as part of Lawrence Livermore National Laboratory's Environmental Restoration Project. Clean water was discharged to the ponds to help control groundwater

flow to a treatment system. Use of the ponds has been discontinued and the area has been returned to SNL/CA for management

SNL/CA proposes to backfill the recharge basin and designate the area for future construction. The US Fish and Wildlife Service (USFWS) considers the area upland habitat for the threatened California tiger salamander. Consequently, formal consultation between DOE and USFWS, and a 3 to 1 mitigation set-aside will be required for the project.

The risk associated with this project is a site operations risk. Review of proposed mitigation has been pending at SSO for approximately 6 months, further delaying completion of the consultation process. Delays in initiating the consultation process and the length of time to complete consultation (up to 3 years) could potentially delay site transition plans for this area.

b. Probability of Occurrence

The probability that a delay will occur is **HIGH**. Site transition plans are not yet approved and there are no planned construction projects for the area. Consequently, the project is not a high priority action at this time.

c. Consequence of Occurrence

The consequence of an occurrence is rated as **MEDIUM** because the inability to transition 32 acres in the west perimeter could have a programmatic impact on Sandia's strategic or operational objectives.

d. Overall Risk Category

In accordance with the chart above, for a risk with a probability of High with a Medium consequence, the risk category is **HIGH**.

3. Taking of a Protected Species

a. Identification of Risk

SNL/CA has incidental take permits for the red-legged frog and the California tiger salamander. The risk is the taking of a species for which we do not have an incidental take permit (we have incidental take permits for the California tiger salamander and California red-legged frog). We do not have take permits for any birds covered under the Migratory Bird Treaty Act.

b. Probability of Occurrence

Given the fact that the majority of the birds found on-site are protected by the Migratory Bird Treaty Act, it is considered **VERY HIGH** that at some time a bird or nest will be accidentally taken.

c. Consequence of Occurrence

As discussed above, the fines for the accidental taking of a bird or nest are normally in the \$10,000 range. Therefore the consequence is assigned a category of **LOW**.

d. Overall Risk Category

In accordance with the chart above for a risk with a probability of Very High and a consequence of Low, the risk category is **MEDIUM**.

4. Reduction in Program Funding by 10%

a. Identification of Risk

SNL/CA is experiencing pressure to reduce expenses for indirect-funded organizations, including Environmental Management. Because the majority of Environmental Planning and Ecology Program expenditures are for labor, a 10% reduction in funding would impact staffing. A reduction in staffing would result in a reduced level of service to line and facilities organizations.

b. Probability of Occurrence

Increasing constraints on site budgets is expected to continue for the next several years. Consequently the probability that funding for the Environmental Planning and Ecology Program will decrease by 10% from FY 2008 levels is **HIGH**.

c. Consequence of Occurrence

A 10% reduction in program funding would result in decreased staffing, training, and purchases. Only those program activities that are required by regulation, Sandia policy, technical work documents, or DOE/NNSA would be conducted. Discretionary training and travel for program staff would be eliminated. Purchases for replacement equipment and equipment repair would be eliminated. A reduction in wildlife monitoring would occur. Support to Facilities Maintenance organizations with pest and wildlife control on the site interior would be minimized or eliminated. The consultation process for backfilling the recharge basin would stop. Delays in completing NEPA evaluations and pre-activity surveys would occur resulting in delays to site projects.

An occurrence could occur as a result of delayed NEPA evaluations. An increased presence of wildlife in the site interior could occur by reducing monitoring activities and support with wildlife control, increasing the risk of injury to the workforce. For these reasons, the consequence of a 10% reduction in program funding is identified as **LOW**.

e. Overall Risk Category

In accordance with the chart above for a risk with a probability of High and a consequence of Low, the risk category is **MEDIUM**.

Appendix D

Line Performance Assessment

Self Assessment Report

8000 EMS Environmental Planning / Ecology Program

Assessment Number: 2325

Assessment Type: Line

**Assessment Dates:
09/10/2007 - 10/02/2007**

Prepared by:

LARSEN, BARBARA L. 10/01/2007
Org: 08516 Phone: 9252942567

Section 1 *Executive Summary*

1.1 Who/What was assessed

The focus of the 2007 Environmental Planning / Ecology Program Assessment is NEPA Compliance for projects involving the use of biological materials. Institutional Biosafety Committee (IBC) agreements valid for FY 2006 and FY 2007 were reviewed under this assessment. A search for and identification of NEPA modules for each IBC agreement was conducted. The IBC scope was then compared with the scope of activities described in the NEPA module.

1.2 Overview of Scope

Nineteen IBC Agreements were reviewed during this assessment. Assessment planning began in September 2007. The assessment was completed on October 1, 2007.

1.3 Why Assessment was performed

Routine Environmental Planning and Ecology Program self-assessment. Also supports an IBC assessment planned by the SNL/CA Biosafety Officer.

1.4 The Assessment resulted in the following:

0 Significant Finding(s)
0 Minor Finding(s)
3 Observation(s)
0 Noteworthy Practice(s)
0 None - Acceptable Practice(s)

Three observations relating to documentation.

1.5 What happens next

Update NEPA Administrative Procedure. Communicate results to Biosafety Officer.

1.6 Who to contact if there are questions

Barbara Larsen is the contact for this self-assessment.

Section 2 Introduction

2.1 Background

All new projects and projects with significant changes require a NEPA review. NEPA review requirements are identified in the ES&H Manual, Section 10B.

2.2 Purpose of assessment

To evaluate implementation of the NEPA review process for projects that use biological materials.

2.3 Location(s) Assessed

None

2.4 Planning Documents Reviewed

None

2.5 Scope/Criteria

ES&H » Environmental Protection » Environmental Management System

ES&H » Environmental Protection » NEPA Compliance - Line Support

Section 3 Assessment Performance

3.1 Assessment Team Members

| Name | Org. | Role |
|-------------------|-------|---------------|
| LARSEN,BARBARA L. | 08516 | Lead Assessor |
| LARSEN,BARBARA L. | 08516 | POC Assessed |
| LARSEN,BARBARA L. | 08516 | POC Assessed |
| CHOI,MABLE | 08524 | Creator |

3.2 Personnel Interviewed

| Name | Org. | Responsibility | Date | Phone |
|-----------------|--------|-----------------------------------|------------|-------|
| VITAL,BOBBIE L. | 085212 | Business Office - Work For Others | 09/24/2007 | |

3.3 Documents Reviewed

| Document | Number | Description | RevisionType | Date of Review |
|---------------|----------------|---------------------------------|--------------|----------------|
| IBC Agreement | 2006-12-12-B-1 | Mass spectrometry of C. elegans | | 09/24/2007 |
| IBC Agreement | 2006-10-10-I-2 | Marine biotoxin detection | | 09/20/2007 |
| IBC Agreement | 2006-10-10-L-1 | Environmental Microbiology | | 09/24/2007 |

| | | | | |
|---------------|----------------|---|---|------------|
| IBC Agreement | 2006-08-08-L-1 | Diatom biodiesel feedstock improvement | | 09/20/2007 |
| IBC Agreement | 2006-05-31-L-1 | Use of Fluorescent and affinity fusions in Yersinia pestis KIM5 | | 09/20/2007 |
| IBC Agreement | 2006-03-29-L-2 | Fusions and knockouts in F. holarctica LVS | | 09/24/2007 |
| IBC Agreement | 2006-03-29-L-1 | Large scale culture of non-toxic diatoms | | 09/25/2007 |
| IBC Agreement | 2006-02-22-R-1 | Portable Devices for Pen-Side Disease Diagnostics | | 09/25/2007 |
| IBC Agreement | No number | Training for Biohazardous Materials | | 09/24/2007 |
| IBC Agreement | 2005-08-31-S-1 | Enzyme Engineering to Improve the Conversion of Cellulose to Glucose for Bioethanol | | 09/25/2007 |
| IBC Agreement | 2006-05-31-L-2 | Use of genetically engineered HeLa and A549 cells - MISL Grand Challenge | | 09/25/2007 |
| IBC Agreement | No Number | Cloning and Expression of human DNA repair genes | | 09/25/2007 |
| IBC Agreement | 2006-08-08-S-1 | Synthetic Biology of Novel Thermophilic Bacteria for Enhanced Production of Ethanol | | 09/24/2007 |
| IBC Agreement | No number | Enhanced Bioaerosol Detection System | | 09/26/2007 |
| IBC | 2005-01-26-H-2 | Expression of | 2 | 09/26/2007 |

Agreement Orthopox Proteins in
E. coli and Cell Free
Systems

| | | | |
|---------------|----------------|--|------------|
| IBC Agreement | 2006-10-10-H-1 | Expression of synthetic viral proteins in E. coli and by IVT | 09/26/2007 |
| IBC Agreement | 2006-02-01-S-1 | Expression of Ricin A chain ORF in E. coli and Cell-free Systems | 09/26/2007 |
| IBC Agreement | 2006-08-08-Y-1 | Hemagglutination assay for HA33 portein using human red blood cell | 09/24/2007 |
| IBC Agreement | 2006-08-08-H-1 | Expression of Y. pestis ORFs in E. coli and by IVT | 09/24/2007 |

3.4 Definitions

Finding: A statement of fact based on objective evidence documenting an act or condition that does not meet requirements, policies, or procedures required by law, a regulatory agency, DOE, Sandia CPR, or a formally-invoked, site-specific, standard.

Significant Finding:

From self-assessments, any Finding that rate High or Medium in risk level (probability of occurrence and consequence criteria per the Enterprise Risk Management CPR) and requires formal causal analysis, corrective action planning, verification, and entry into CATS.

Additionally, any:

- Issues (Findings) from Sandia's Independent Audit and Advisory Services Center;
- Findings from internal, independent assessments (e.g., Weapon Quality Assessment.);
- Issue identified as a corporate issue through the Corporate Issues Management Process.

Minor Finding: Any Finding from self-assessments that rate Low in risk level (probability of occurrence and consequence criteria per the Enterprise Risk Management CPR).

Observation: A statement of fact based on objective evidence documenting an act or condition that does not violate a requirement but may need improvement.

Noteworthy Practice: A process or condition indicating exceptional or innovative policy, practice, or performance.

None - Acceptable Practice: A process or condition with no observed problems.

Section 4 Significant Findings

This Assessment resulted in 0 Significant Finding(s).

Section 5 *Minor Findings*

This Assessment resulted in 0 Minor Finding(s).

Section 6 *Observations*

This Assessment resulted in 3 Observation(s).

Observation No. 1

Nineteen IBC agreements valid for FY 2006 and FY 2007 were reviewed for compliance with NEPA. Fourteen could be mapped directly back to a NEPA Module review. The remaining 5 IBC agreements were difficult to map back to a NEPA Module review because the agreements were for specific tasks under a broader project review.

Trending Code: Documents and Records

Result Location(s):

None

Result Criteria: ES&H » Environmental Protection » Environmental Management System

Observation No. 2

Several NEPA Modules corresponding to IBC Agreements provided generic information about the use of BSL-1 or BSL-2 materials. The specific materials used were not identified.

Trending Code: Documents and Records

Result Location(s):

None

Result Criteria: ES&H » Environmental Protection » NEPA Compliance - Line Support

Observation No. 3

None of the NEPA Module reviews included a reference to the IBC agreement number.

Trending Code: Documents and Records

Result Location(s):

None

Result Criteria: ES&H » Environmental Protection » NEPA Compliance - Line Support

Section 7 Noteworthy Practices

This Assessment resulted in 0 Noteworthy Practice(s).

Section 8 None - Acceptable Practices

This Assessment resulted in 0 None - Acceptable Practice(s).

Section 9 Improvement Action Details

Observation No. 1

Nineteen IBC agreements valid for FY 2006 and FY 2007 were reviewed for compliance with NEPA. Fourteen could be mapped directly back to a NEPA Module review. The remaining 5 IBC agreements were difficult to map back to a NEPA Module review because the agreements were for specific tasks under a broader project review.

Result Criteria: ES&H » Environmental Protection » Environmental Management System

| Part I - Improvement Action Report (IAR) | | |
|---|---|---------------------------------------|
| Reference Identification No: #2325 | Improvement Action Request No: #2325-O1-IA1 | Issue Date: TBD |
| Type: None | Owner Name: TBD Date: TBD | |
| Assessee Mgr. Name: LARSEN,BARBARA L. Organization: 08516 | | |
| Assigned due date: TBD | Estimated completion date: TBD | Actual completion date: TBD |
| Comments: None | | |
| Improvement action: Recommend including the name of the project or program that the IBC Agreement supports and/or reference the NEPA ID Number in Section D, Work Location and Support. | | |
| Name of manager or Delegate: LARSEN,BARBARA L. | | |
| Part II - Improvement Action Action Verification (IAV) | | |
| Actions taken to verify satisfactory completion: TBD | | |
| Evaluation of improvement actions (satisfactory completion, not satisfactory / why): TBD | | |
| Verified by: TBD | Date of verification: TBD | |

Observation No. 2

Several NEPA Modules corresponding to IBC Agreements provided generic information about the use of BSL-1 or BSL-2 materials. The specific materials used were not identified.

Result Criteria: ES&H » Environmental Protection » NEPA Compliance - Line Support

| Part I - Improvement Action Report (IAR) | | |
|--|---|---------------------------|
| Reference Identification No: #2325 | Improvement Action Request No: #2325-O2-IA1 | Issue Date: TBD |
| Type: | Owner | |

| | | |
|---|---|---------------------------------------|
| Further Action Required | Name: LARSEN, BARBARA L. | Date: TBD |
| Assessee Mgr. Name: LARSEN, BARBARA L. Organization: 08516 | | |
| Assigned due date: TBD | Estimated completion date: 11/30/2007 | Actual completion date: TBD |
| Comments: None | | |
| Improvement action: Identify specific biological materials proposed for use in all future NEPA reviews. Update the NEPA Administrative Procedure to include this requirement. | | |
| Name of manager or Delegate: LARSEN, BARBARA L. | | |
| Part II - Improvement Action Action Verification (IAV) | | |
| Actions taken to verify satisfactory completion: TBD | | |
| Evaluation of improvement actions (satisfactory completion, not satisfactory / why): TBD | | |
| Verified by: TBD | Date of verification: TBD | |

Observation No. 3

None of the NEPA Module reviews included a reference to the IBC agreement number.

Result Criteria: ES&H » Environmental Protection » NEPA Compliance - Line Support

| | | |
|---|---|---------------------------------------|
| Part I - Improvement Action Report (IAR) | | |
| Reference Identification No: #2325 | Improvement Action Request No: #2325-O3-IA1 | Issue Date: TBD |
| Type: None | Owner Name: TBD | Date: TBD |
| Assessee Mgr. Name: LARSEN, BARBARA L. Organization: 08516 | | |
| Assigned due date: TBD | Estimated completion date: TBD | Actual completion date: TBD |
| Comments: None | | |
| Improvement action: Most often, the NEPA review is completed before the IBC review. Consequently, the IBC number is not available to include in the NEPA Module. To improve NEPA documentation, the IBC number can be added afterwards via the comment field. | | |
| Name of manager or Delegate: LARSEN, BARBARA L. | | |
| Part II - Improvement Action Action Verification (IAV) | | |
| Actions taken to verify satisfactory completion: TBD | | |
| Evaluation of improvement actions (satisfactory completion, not satisfactory / why): TBD | | |
| Verified by: TBD | Date of verification: TBD | |